S-RO-RO FLADS - CORETAINERS

Tuesday April 13 1982

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NEWS SUMMARY

BUSINESS

Saudi oil

of target

have sbut off Iran's pipeline to

the Mediterranean. Back Page.

• WALL STREET was 0.9S lower at 841.99 shortly before

• CENTRAL ELECTRICITY
Generating Board has told the
Government It wants to increase

substantially its coal imports this year, which could start a

row with miners' unions. CEGB

imports are presently held back

to 750,000 tonnes a year. Page 6

reform package proposed by BL Cars' management has run

into opposition from the com-

A COMPROMISE over Presi-

dent Reagan's controversial proposals for the 1983 U.S. hud-get seems liklier in Washington.

• UK TEXTILES and garments trade was in £1.04bn deficit last year with imports up 7 per cent

and exports down 16 per cent

• THE GOVERNMENT seems

to be ignoring calls for tax con-

cessions on petrochemical raw materials by BP Chemicals and

fears are growing of a plant closure at Grangemouth, Scot-

be ready to huy the New York

Daily News, but would propose nothing definite until Joe All-

CHINA has sgreed to pay

\$5.5m (£3.13m) for photocopying machines and technology to Clark Copy International Corp.,

• BP CHEMICALS has doubts

about the safeguards designed to protect its synthetic alcohol

husiness written into the EEC

· A RISE in Belgian interest

rates helped the Belgian franc

improve within the European

Monetary System last week although it remained the weak

est member. The French franc showed little change, but market speculation about a possible realignment increased ahead of

EMS April 8, 1982

ECU DIVERSENCE

currency touched a

wine agreement. Page 7

hritton's option expired.

of Chicago. Page 4

by volume. Page 4

pany's two higgest unions. Back Page

INDUSTRIAL relations

the close. Page 23

output

GENERAL

Ecevit held over BBC falls short interview

Formec Turkish Prime Minister
Bulent Ecevit was detained duction last month averaged again in Ankara only hours

SAUDI ARABIAN oil production last month averaged well below the 7m barrels a day after a military court had ordered his release.

The court had heard charges that Mr Ecevit, 56, had given an interview to a Norwegian news-paper in defiance of Govern-ment orders. He was accused of issuing false and exaggerated statements detrimental to Turkey's prestige and authority

Mr Ecevit, the chief opponent of the military regime, is now being held in connection with an interview given to the BBC.

Steeltown aid

The EEC is to allocate £30m. spread over five years, in an extra aid package for steel and shiphuilding areas of Britain. Back Page

Children die

Four children—the eldest aged five - died in a fire at a maisonette in Lamheth, south London, Their mother, who had been at an all-night party rejurned home at \$.30 am as firemen were putting out the blaze.

Teenagers shot

Three merseyside teenagers died in a mystery shooting tragedy in North Wales. The hodles of twins Mark and Michael Otter and a friend were found near their holiday caravan at Trawsfynydd, Gwynedd. Police believe no one else was

Yacht death

The body of a woman who fell The body of a woman who fell overboard from a yacht in a AUSTRALIAN publisher race off Hartlepool was Rupert Murdoch, owner of the race off Hartlepool was recovered by lifeboatmen. The search for a man from the yacht fleet continued.

Holiday arrests

Shop windows were smashed in Scarborough, and fighting broke out over the weekend after gangs of youths attended a motor-scooter rally. More than 130 were arrested. In Southend, more than 80 arrests followed fighting between skinheads and

Terror shooting

Terrorists in speeding cars fired shotguns and hurled grenades at a police hus outside the converted courthouse in Rome where the sileged killers of former Italian premier Aldo Moro go on Irial temorrow. Three policemen were wounded.

Nuclear protest

West Germany's anti-nuclear peace movement said 450,000 took part in Easter marches in protest against more U.S. missiles in Europe. Page 2. In Oxfordshire, protestors failed in an attempt to set up a peace camp outside the U.S. Air Force base at Upper Heyford.

Sleepless week

A 55-year-old Frenchman is attempting to go without sleep for a week in try lo win state aid for a printing company in Alencon which employs handi-

capped young people. Briefly ...

Ferry sank near Rangoon on Sunday. More than 70 were feared drowned.

erupted on Sunday, six days after the last eruption. Kenya safari motor rally was

Galunggung volcano in Indonesia

Shekmar Menta for the fourth successive year. Spanish Footballers' Association

called off a pay strike by stayed at the top of the system, players through lack of support. continuing its steady rise.

. CONTENTS -

Erench

U.S.: a downturn with a Commercial law: digest of difference 14 Hilary term cases FT Index: still no equal Editorial comment: Falk-Around Britain: N. Ireland textile jobs threatened 6 Lombard: Samuel Brittan Technology: computer born on funny money 15 in a castle 12 Management: pooling re- Survey:

lands crisis; inner cities 14

the long Easter week-end; as the

record low against the dollar. Eurolira rates fel as the lira

improved slightly, moving up

hy about the same amount as

the Irish punt. The D-mark

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Haig likely to return to Buenos Aires today: Parliament debate tomorrow

Argentine offer outlined to Thatcher

BRITAIN and Argentina yesterday showed first signs of edging back from coofrootation over the Faikland Islands as talks between Mrs Margaret Thatcher, the Prime Minister, and Mr Alexsnder Haig, the U.S. Secretary of State, continued late into the evening.

No. 28,747

Mr Haig was reported to have discussed with Mrs Thateber a firm offer by Argentina to with-draw its forces from the Falklands, provided Britain recognised Argentine sove-reignty over the islands, ordered and end to its naval blockade of the Falklands and ordered its task force to return home.

output ceiling set at tast month's Opec meeting and it is considering another 500,000 harrels a day cut to check the The British ban on Argentine downward pressure on world prices. Syria has claimed to vessels entering a 200-miles "maritime exclusion zone" around the Falklands come into effect at 0400 GMT vesterday. But, though the British Government had made it clear that any Argentine vessel found within this zone after the deadline risked being sunk, no incident

had been reported by last night.
The Defence Ministry in London said that there had been no reports of Argentine warships or naval auxiliary vessels within the zone since it was established. The Ministry confirmed that all but two of Argentina's major warships were still in port as they had been on Saturday. The Ministry would not comment on the whereahouts of the two remaining vessels, which are helieved to he a corvette and, possibly, one of Argentina's two Type 42

British-huilt destroyers. The ministry, though it is now giving daily hriefings is still refusing to disclose any delails on the location of the British naval task force an dthe rules of engagement which might

It is consistently refusing to



The Prime Minister with Mr Alexander Haig, U.S. Secretary of State, outside 10, Downing

 Argentine offered to end its military necupation of the Falkland Islands if Britain recalled its naval task force. British naval blackade of the islands began at 4 am GMT yesterday but an

immediate clash appeared remote. Argentina withdrew its ships to home bases but continued to air-lift supplies to the Falklands.

● EEC ban of all Argentinian imports will be implemented after a brief round of talks in Brussels tomorrow. Japan warned Argentina that rela-

comment on reports that up to time Foreign Ministry.

be adversely affected if troops were nnt withdrawn in accordance with the UN resolution. Peru requested Britaio and Argen-

tinns between the twn chuntries could

tina to observe a 72-hour cooling-uff period until Mr Haig's conciliatory mission ends. Argentina yesterday accepted the proposal.

• UN Scerelary General Javier Perez de Cuellar flew back to New Yurk vesterday after cutting short his European tour because of the crisis.

to replace the estimated 10,000 Argentine troops on the islands. four British swiftsure class Argenlina has also accepted nuclear-powered submarines Peru's proposal to the Iwo Argentina has also accepted are in the Falkland Islands parties to the Falklands dispute Thatcher has been insisting that to accept a 72-hour "coolingall she will discuss is with-The U.S. Secretary of State off period which would allow is expected to fly back to Mr Haig's good offices mission Buenos Aires today with the to conlinue. The two-part perudrawal of Argentine forces and then the start of diplomatic negotiations over the future of

vian plan also involves the the islands. troop withdrawal proposal, the creation of a mixed peace-keep. The British line is that, at existence of which was last ing force drawn from Latin present, it is only prepared to night confirmed by the Argen- American and other countries talk about implementing the

which demands that these steps should be earried out. The British Government has hen insisting on an interim solution to diffuse the tension and has demanded that any

UN security couocil resolution

question of sovereignly should be broached only at a later However, inspite of these differences at ooon yesterday

some officials on the Brilish side believed that a light had at last oppeared at the end of the Mr Haig telephooed

Nicanor Costa Mendez the Argentine Foreign Minister apparently to stress the British view that sovereignly could only be discussed later on and nicht the cabine) was meeting to talk over modifications to the proposals which they had made to Mr Haig, when he was in the Argentine capital.

Among the ideas floated to help bridge the gap between the two sides is an Argentine suggestion that Argentice civilians remain behind to administer the islading or share the administration with the Falklanders.

However, perhaps even more crucial has been the problem of building a linkage between the two "phases" of the problem-the withdrawal of Argentine forces and Britain's willingness to discuss future aragnements for the islands. It is details of On the British side, Mrs the linkage, however informal which may he established hetween these two phases which was at the heart of the long discussion between Mr Haig and Mrs Thatcher yesterday.

To underline the strength of public feeling in Argentina over the Falklands issue, the authorities laid on the biggest demonstration seen in Argentina in recent decades outside the Plaza Casa Rosada, the Presidential Palace while the talks were going on inside on Salurday between Mr Haig and General Leopoldo Galticii, the Argen-Ilne President.

In public, Argentine opinion presents o solid block behind General Galtieri in his refusal to code either control or sover-eignly over the Island. Backing for the Government's intransigent position, has come from the entire political spectrum

including the Communist Party, Privalely though, some Argentines are growing weary of the insisient propaganda they are being homharded with on radio and television and are prepared to tell foreign journalists they believe General Galtieri ls simply living to distract aftention from Argentina's pressing economic problems.

To counter its virtual

Continued on Back Page Invasion aftermath Page 3 Editorial Comment, Page 14

Commons to hear progress report

By Peter Riddell, Political Editor

PARLIAMENT has been recalled from the Easter recess to sit in emergency session ioniorraw afternoon to hear a report on the negutiations over the Falkland Islands.

The recall is at the request of Mr Michael Fuot, leader of the Opposition, and there is likely in he a three to four hour debate.

The Government is keen to keep the Cammons fully in-formed to ensure that the bread unity acrong MPs of all parties is maintained and that the Labour Party is given no prefext to oupose.

Mrs Thatcher is, however. likely to face close serutiny and possible criticism from Toey Right-wlogers who have heen concerned that no conressinns should be made to the Argentine and in particular that the Gritish sovereignty must be reslored to the Islands.

Sir Bernard Braine and Mr Man Gark have warned that they will oppose any deal which they regard as a "selfnut" of the islanders' posi-tion. This group could number two or three dozen MPs,

Mrs Thatelier has limited her freedam of manneuvre hy heink quite explicit about the restoration of sovereignty though Mr Francis Pym. the Foreign Secretary, has deliherately left himself a range of oplions.
There is 'quite a sizeable

group of Tory MPs who have so fae heen mainly quiet hut who will clearly he relieved if the dispute can be settled without the use of armed force. These MPs are becoming increasingly apprehensive about a possible adverse public reaction if force has to he used and there are casual-

ties.
The latest opinion poll carried unt by ORC for ITV's Weekend World programme - shows that the vast majority of the public support the Government line at present.

The poll also shows that the crisis has not so far damaged the Government's popularity. The Conservatives are shown with 37 per cent of the vole, Labour with 35 ner ceot and the Social Democratic/ Liberal alliance with 28 per ccot. A poll about ten days ago gave the parties roughly equal sbares.

Firestone considers buying Hertz

BY RICHARD LAMBERT IN NEW YORK.

FIRESTONE TIRE and Rubber, has been put at about \$750m debt represented 44 per cent of Tennessee to Bridgestone Tire, the second biggest U.S. tyre [£427.6m]. The company has Firestone's equity, down from the leading Japaoese manumaker, is contemplating a bid said that it expects that pre-tax 72 per cent two years earlier, facturer, for more than \$50m. for the Hertz car rental hust-profits this year will exceed Tyres and related products The plant makes radial tyres ness, a subsidiary of the RCA \$100m. Corporation. Firestone said that exploratory talks have already taken place with RCA, which announced in January that sheet of about \$320m. Hertz Corporation was for sale.

Hertz, the U.S. market leader in car rentals, "is the kind of husiness and has the kind of management to which we would be attracted," Firestone said. But it warned that it was too early to say whether any offer would be forthcoming, and there have been reports that RCA is talking with other

a very major diversification for Firestone which at the end of January had cash in its halance Firestone's net income in the

area to enforce the blockade. The U.S. Secretary of State

British reponse to the Argentine

first quarter of this year fell to just \$2m, compared with \$76m in the same period a year earlier. But the company said it was well placed to show significantly higher profits when the economy recovered. During the past few years it

has substantially strengthened its position by closing surplus another year or so. ossible hidders. capacity and cutting its debt. Earlier this year, the com-The asking price for Hertz At the end of last year, total pany agreed to sell a plant in

This would represent acount for more than four-fifths major diversification for of Firestone's sales which totalled nearly \$4.4hn last year. Three-fifths of the tyre husiness is in North America.

> Mr John Nevin, who as chairman and chief executive has been responsible for reshaping the company in the last two years, has made it clear that Firestone wanted to reduce its exposure to the Tyre industry. But until recently he has indicated that any major diversification was unlikely for

piani makes radiai tyres for use on heavy trucks and Apart fro mihe fact that Hertz is a major huyer of tyres. another possible reason for buying the car rental company is that Firesione has been develop-

ing a chain o automotive retail-the U.S.

RCA's decision to sell Hertz followed a sharp fall in the group's overall profits and a steep rise in horrowings during 1981. Since Bendix announced last month that it had bought

more than 5 per cent of RCA's shares there has been specula tion that the whole company Continued on Back Page

Palestinians stage protest strike BY PATRICK COCKBURN IN JERUSALEM

PALESTINIAN'S in the Israeli-

staged a near-total strike yester- reduce tensions over Lehanon injured when a gunman in Israeli Army uniform opened fire on guards at the Moslem

More than 90 people were reported injured in a series of clashes between demonstrators and Israeli security forces, which broke ont yesterday. The latest violence erupled

shortly before the White House in Washington announced that

PALESTINIAN'S in the Israeli- A White House spokesman misal of three West Bank occupied West Bank and Gaza said the visit was aimed to mayors.

However, a State Department spokesman said later that Mr Stoessel's visit was aimed primarily at easing the remaining difficulties between Egypt and Israel before completion of the hand-over of Sinai to Egypt on army. April 25.

Meanwihle, violent clashes were reported throughout the Israeli-occupied territories. The strike, which was called by President Reagan was sending the Supreme Moslem Gouncil.
Mr Walter Stoessel, Deputy appeared to have been more
Secretary of State, to Israel extensive than the one staged last month over the Israeli dis- mosque area.

The old city of Jerusalem day in prolest at the shooting on Sunday at the sacred Temple and reflected U.S. concern was completely closed yesterday about a possible israeli strike and there were occasional against Palestinian guerilla clashes between stone-throwers positions in southern Lebanon.

The Israell Government is emphasising that the Temple Mount incident was the sole work of an unbalanced Ameriean immigrant, Alan Goodman, who was training in the Israeli

Moslem leaders contend that their traditional religious rights on the Temple Mount are now under threat. This belief is intensifying sectarian animosities. The Moslem religious authorities have called for the immediate reopening to them of the

Labour urged to oust Militant

BY JOHN LLOYD, LABOUR EDITOR

other groups seen as being of electoral chances, the extreme Left.

Three big unions with leaders in the Righl and Centre will dehale calls from members for the return of the "proscribed list"-a list of organisations disqualified from Labour Party memhership. The list was abolished in the

early-1970s. Motions to deplore

"witch hunts," and calls for a consolidation of the gains made hy the Left in the Party in recent years, will also be heard. Tendency on which a Labour Party inquiry is expected to report in June, threatens to union. The issue of the Militant be almost as divisive of the unions' political efforts as was the deputy leadership contest last year. This is likely to be

inquiry proscribes the group.

The thrust against the Ten-

dency is being directed by

THE LABOUR PARTY is to are prepared to see the group objectives, sources of finance come under increasing pressure expelled because of the damage and the links with political from the unions to expel the they believe it has done, and organisations situated abroad Militant Tendency, and possibly will continue to do, to Lahour's are consistent with the criteria One left-wing member of the TUC general council said at the tion."

weekend that he would support

27 divisions call for a re-introduction of a list of proscribed year. This is likely to be organisations, while a fourth case whether or not the resolution calls for an investigasome prominent left-wingers internal structure, their sims, objections to such a move.

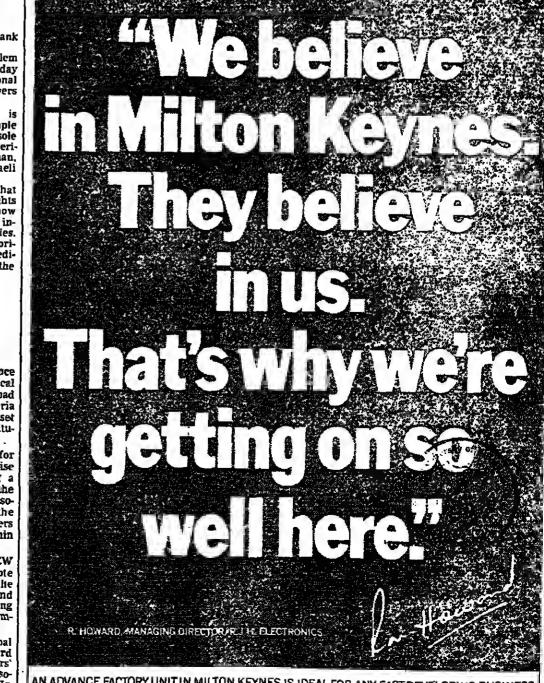
for membership of the Party set out in Clause II of the Constitu-A further resolution calls for

expulsion of the group if the an end to Party strife, otherwise expulsion of the group if the an end to Party strife otherwise inquiry were to show it to be a "our chances of returning a separate organisation with his Labour Government in the own rules and funds which he future are nil." Only one reso-helieved to be the case. Intro opposes the return of the The most forthright calls in proscribed list, though others expulsion of groups on the list support left-wing policies within left appear in resolutions for the national committee meeting the party.

It is likely that the AUEW leadership will wish to promote union of Engineering Workers list to become union policy and

list to become union policy, and will rely on the large right-wing majority in the national com-Resolutions from three of its mittee to win the day.

The General and Municipal Workers' Union — the third largest — and the shopworkers' union Usdaw have similar resotion of organisations "known to lutions on their agendas. In he present in the Party, with a their cases, however, the view 10 establishing whether demands for a return of the list unions led by right-wingers, but their own constitutions and are halanced, or outweighed by



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THE French Government's efforts to refurbish its public image in time for next year's key municipal elections bave been given an embarrassing setback at the start by a clash with its own Socialist Party supporters in the National

Assembly. Friction arose over the postponement of a new penal bill, designed to replace a contro-versial reform introduced in the last days of the Giscard Administration. Party members were evidently not consulted about the change of agenda. Socialist deputies showed sur-

prise and anger last week over the delay in bringing out the new provisions, which were to have been approved at Wednes-

day's Cabinet meeting.

M Pierre Mauroy, the Prime
Minister, said that the Government would keep its word and repeal the Security and Liberty Act - generally known as the Peyrefitte Law — but that Peyrefitte Law, which came into security probelms required a effect last February, was "global" approach. He added attacked by the left and by a that a new text would be tabled during the current parlia- sion as mentary session, ie before the "retrograd

Unions prepare riposte to Renault

tions during the week.

the

with the main union federa-

oriented CGT and its left-wing

rival, the CFDT, called on all the plant's 18,000 workers to

turn up when the gates re-

open today after the Easter

The lay-offs were prompted by the outhreak of a fresh strike movement immediately

following the settlement of a

first, week-long pay dispute

The new strike involves

last week.

Communist-

FRENCH unions were last night preparing a risposte to the Renault car group after its decision to lay off almost 7,000 workers at its Flins factory, west of Paris, as a result of a pay strike, our Paris staff reports.

The dispute, which, after a prolonged conflict last autumn, brings the state-owned motor company back to the fore-front of the labour scene, overshadows a series of talks which M Pierre Mauroy, the

Prime Minister, is to have

A special committee has been working since last summer on substitute legislation. The

large part of the legal profes-sion as "repressive" and

" retrograde."

carry out identity checks, police custody of up to three days in certain cases instead of two. and - as part of an effort to speed up criminal procedures -- wider powers for public proto bring suspects secutors

total incoherence. Socialist Raymond Formi.

Mitterrand's election last year. Its clauses included tougher recourse to an examining sentences, reinforced powers to magistrate. While opposition deputies crowed over the Government's

chairman of the National Asembly's Law Commission, attacked the "clumsy decision"

250-300 workers according to the company, or 1,200 accord-

The dispute involves mainly

immigrant assembly - line

workers engaged on the Renault-5 and Renault-18

lay-offs as "worthy of the Giscard Government" M

Jean-Louis Fournier, a CGT

chief at the company's main

Paris plant, said that Renault

situation had since President

The CGT has attacked the

ing to the unions.

models.

workers'

worsened

maintaining the Peyrefitte Law, even temporarily, would do nothing to curb violence and that the authorities should not

M Robert -Badinter, the Justice Minister, said that the postponement was "not an event," and that the new text should be put before the Cabinet by the end of this month.

The decision was taken

against a background of evidence that concern about security may have played a role in the Government's recent loss of popularity and its defeat in last month's cantonal elections. This concern has come to the fore with recent incidents such as the explosion which killed five passengers on the Paris-Toulouse express on March 29.

Lates polls show that President Mitterrand and M Mauroy.
while keeping a majority in
their favour, lost sharply in
popularity between late
February and late March, and that M Gaston Defferre, the Interior Minister who has been at the centre of a row with his attacked the "clumsy decision" top police hierarchy, plum-sentences for to posspone repeal. He said that meted 16 points to show a police officers.



M Pierre Mauroy: trying to halt popularity slide

"negative" opinion rating of 55 Following the death of a policeman on Thursday from a bullet wound inflicted two weeks earlier — the fourth to be murdered in less than a month — M Badinter was reported yesterday to have promised to press for heavy sentences for assaults against

Japanese unions likely to accept moderate rises BY RICHARD C. HANSON IN TOKYO

JAPANESE unions ore expected to accept moderate pay rises in the next few days as this year's wage battle comes

Public and private transportation were saved from striking today when union leaders of major private and public railway and bus companies agreed to wage increases worth just over 7.06 per cent last night.

This year's settlements will against depend largely on the outcome of negotiations by members of the powerful Council of Metalworkers Unions — which include motor. steel, shipbuilding, and other metals and electrical machinery

The unions have tabled an initial demand for a 9 per cent increase in basic pay. Manage-ment, on the other hand, is offering rises of slightly over

7 per cent. As indicated by last night's year. agreement, settlements are generally expected to be reached near the latter figure. Unious' demands for higher increases have been undercut by a U.S. slowing in the economy and, year.

ironically, by lower rates of inflation this year. Last year the unions were able to secure an increase averaging 7.7 per cent. But this was still less than the rate of inflation, resulting in decline

in real wages of about 0.1 per Inflation this year, according to official projections, is running at about 4 per cent -

versus 7.8 per cent. The final scittement will almost certainly leave the average worker in a large company with a real increase of about 2 per cent. Workers in smaller companies, however, which have been barder bit by the economic slump, will be hard-pressed to keep pace.

Concessions by management so far have been, to say the least, moderate. The electrical workers' union, for example, was forced to struggle hard to win just one more day off per

Japanese companies have argued strongly for modest settlements, citing the concessions being made by unions in the U.S. and West Germany this

AFTERMATH OF ATTACK ON DOME OF THE ROCK

Pilgrims desert Jerusalem as patrols move in

of the old city of Jerusalem, normally packed with pilgrims celebrating Easter and Passover, were empty yesterday, apart from the occasional Israeli patrol The Temple Mount area, above

whose walls can be seen the silver and gold dome of the Al-Akasa mosque and the 1,200-year-old Dome of the Rock was cordoned off by Israeli troops,

mosque with two magazines from his M-16 sub-machine gun.

Even the Holy Sepulchre Church, site of the crucifixion, where normally a dozen different Christian sects can be found, was largely empty. Ossasional bursts of gunfire could be heard across the roofs of the city as Israeli the roofs of the city, as Israeli patrols fired into the air to disperse demonstrators.

Workmen are trying to replace the glass broken by builets on Sunday when Alan Goodman, a groceries to some of the world's

out to buy bread from a few carts beside the city gates.

Jerusalem over the last week. was a party of Germans dourly picking its way over stones burled at Israeli troops, apparently not beeding the sporadic violence around them. The strength of the reaction Jerusalem to Sunday's shooting is significant because

The only sign of the tens of of the Rock, and the thousands of tourists and clashes between troops and pilgrims, who have poured into demonstrators afterwards, has there have been an increasing outraged the more conservative number of clashes over the right Arabs in the city, previously of Jews to worshi chary of involvement in strikes Temple mount itself.

THE NARROW, winding streets is racii Army, sprayed the ally, Arab women, wearing long react to calls for political action Mecca and Medina, just as the of the old city of Jerusalem, interior of the Dome of the Rock embroidered dresses, darted by the more militant Palestinian Waling Wall on the Western normally packed with pilgrims mosque with two magazines from out to buy bread from a few leaders. Mount area is sacred to the

> Over the past few years of Jews to worship on the

For the moment, the Israeli Many Jerusalem Arabs say Government seems keen to keep they see the attack as part of a a relatively low profile, and campaign by extreme religious there has not yet been any Jews to take over all or part of attempt forcibly to reopen the Temple Mount area. This is shops on strike. This could pro-

the city is normally slow to the holiest shrine of Islam, after voke further violence. AN AFFORDABLE STEP FORWAR

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Polish recovery possible

WASHINGTON - Poland's industrial capacity remains large and, if economic reforms and labour peace could be achieved, a study for the Joint Congressional Economic Committee said.

Meanwhile, however, the imposition of martial law in Poland bas compounded existing economic problems, according to the report.
While Poland's policy during the 1970s of heavy

industrial investment financed by hard currency borrowings has left it with massive foreign debts, it has also left it with a basis to rebuild its shattered economy," the report said.

The report said obtaining hard currency to buy Western goods will be the main diffi-culty in Poland's trade with the U.S. and other Western

"Solidarity's political crisis which emerged in 1980 and 1981 was a result, not a cause, of Poland's economic problems," said Mr Henry Reuss, the committee chair-

man.
Poland imported large amounts of goods and equipment in the past decade to expand its industrial capacity and ruise its standard of living, and pald for that growth with credit from Western governments

banks, the study said.

The Polish Government gambled that growth of exports would enable it to repay the debt to western banks, but it was nuexpectedly hindered by the western

After 1975, Poland was also hurt by mismanagement and bottlenecks in its opening of new factories

Radio Solidarity, a
new organisation apparently

formed recently was planning to broadcast its first pro-gramme last night although some technicians doubted its

Zimbabwe policeman killed in beer hall attack

BULAWAYO-A Zimbabwean remnants of former guerrilla police officer was killed and three other were wounded in a weekend grenade attack on a patrol in Bulawayo, the country's second city, officials disclosed yesterday.

At least two civilians were also wounded in the blast which occurred in a suburban beer hall on Friday night. Several people have been arrested in connection with the incident, Five policemen went to the

beer hall after a report of trouble there, and the grenade was tosed in when they entered, a police spokesman said. There was no indication of the motive behind the attack, but dissident Reuter

groups are in the area. Mr Emmerson Munangagwa, bead of state security, said recently that a number of people, including former guer-rillas loyal to Mr. Joshua Nkoma; had been arrested in Matabeleland province following the discovery of secret military train-

Mr Nkomo's followers disappoited by their leader's defeat by Mr Robert Mugabe in Zimbabwe's independence election two years ago and it is the hush rather than accept the

German N-protesters say 450,000 backed rallies

planned deployment of new a rally on Sunday. nuclear missiles in Europe. Four days of peace rallies ended last night with demon-

strations in Dortmund, West Berlin, Hanover and other citles which, the organisers sald, drew about 120,000 pro-

testers.

The weekend turnout, despite poor weather which included snow, was hailed as a major political success by a spokesman for the peace movement in Frankfurt, where the nationwide campaign was coordinated. "The message is that we shell you root yout the that we shall not rest until the deployment of medium-range missiles is stopped," he said.

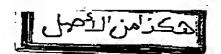
The organisers' attendance figures were challenged by

Germany's anti-nuclear move—where yesterday's largest rally ment said yesterday that 450,000 was held, and in Frankfurd, people took part in Easter where the peace movement marches to protest against the claimed 60,000 participants in

> attended the rally, while organisers' estimates of between 50,000 and 70,000 for the Dortmund protest were at least three times the figure issued by police. The demonstrators in Dortmund, a rallying point for morchers from the industrial Ruhr, were lold by a former mayor of West Berlin. Herr Heinrloh Albertz, that the peace movement was also gaio-ing strength in the U.S. Reuter

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THE FALKLAND ISLANDS INVASION

Japanese hint at economic sanctions

By Charles Smith, Far East Editor, in Tokyo

JAPAN yesterday warned Argentina that the two countries' economic relations "might be disturbed" if the crisis over the Falklands is

It also called for the early withdrawal of Argentine troops from the Falklands and urged the government in Buenos Aires to go along with American "good offices". The Japanese warning.

which was conveyed to the Argentine Ambassador by Mr Yoshio Sakuranchi, the Foreign Minister, represents Japan's response to a British call for sanctions against Argentina. Roughly the same form of words as that used to the Ambassador is underto the Ambassagor is under-stood to have been included in a letter sent yesterday to Mrs Margaret Thatcher from Mr Zenko Suzuki, the Japan-ese Prime Minister, in reply to Mrs Thatcher's letter of

Lotan Lotan Lotan Lotan Lotan

· Charge

" Hara

Japanese officials were at pains yesterday to emphasise that the Government had responded "positively" to British demands for saoctions, and had not rejected them as earlier reported. Though officials were unable to say yow soon relations with Argentina might be Argentina might he disturbed if the current situation continues, or in what way the Japanese news agency Kyodo said Mr Suzuki had refused to impose economic sanctions against Argentina.

against Argentina. In ber letter last week Mrs . Thatcher asked Japan to ban all imports from Argentina and to use "self-restraint" In the extension of commercial credit. The letter also asked Japan not to export arms but this is in any case banned under a Japanese

Government code
Japan was quick to
condemn Argentina's use of force in the Falklands, through its UN ambressque, but has hinted that it might also condemn the use of force by Britain.

The Japanese position on the Falklands crisis is not related to the substance of the issues pending between the Argentine and the UK."—In other words, the Government keeps an open mind on the question, which side the islands actually belong to.

Japan exports to Argentina in the first 11 months of 1981 were worth \$749m, or about 0.5 per cent of its total exparts, while imports came \$260m (0.2 per cent of the total). These figures rank Argentina well below Brazil and Mexico in the list of Japan's Latin American trading pariners. However, a series of recently secured plant contracts could make relationship more

important in future. contracts include a Y77bn rail electrification project won by Marubeni and Toshiba together with a share in the Y200bn Yacireta power project (in which West Germany is also involved).

IT IS DIFFICULT to believe that the island fortress at the centre of a major international crisis was once a sleepy island community — a picture-postcard image of English village life complete with its bobbies, town

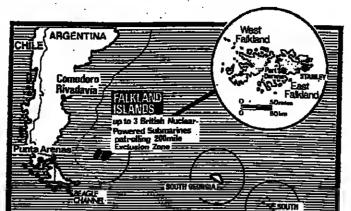
hall and pubs. But there is no over-estimating the transformation that has taken place in the Falkland Islands since the Argentine invasion 11 days ago.

With the deadline of the with the deadline of the blockade falling due, the Argentine armed forces yesterday announced that they had completed the bulk of an operation they considered necessary to defend the islands from a defend the islands from a British altack. For over a week military

transport planes have been shuttling troops and equipment around the clock to the islands from the southern mainland bases of Comodoro Rivadavia and Rio Gallegos. So massive has the traffic to the islands been that the authorities have bad to call up civilians who had completed national service to back up the professional reinforcements.

Amphibious craft and naval personnel that were used in the invasion bave been reinforced by an impressive array of armaments and troops. Although exact details are censored by military authorities, the build-up of the past few days is known to have included the transport of amoured personnel carriers, sophisticated radar selves. Foreign journalists have equipment and long-range guns and anti-aircraft guns.

been placed in coastal positions to read between the lines of on the islands and will presumGovernment statements, ably be used against the scattered eye-witness confes-British fleet, if and when it sions, and the comments of the enters the area. Meanwhile, few Argentine journalists who fighter planes now straddle Port bave managed to report from Stanley's only runway in pre- the occupied Falklands a picture



paration for any air attack. There are over 10,000 troops on the islands, compared to an estimated 4,000 at the time of the invasion. The huild-up followed the inauguration of the

military governorship of General Mario Benjamin Menedez, a man of few words but tough military tactics and a strong contrast with his predecessor, Mr Rex Hunt, the genial British colonial officer, whose principal activities used to be squash and kitchen

While festive pro-Government demonstrations take place among the Argentines and cold back-room diplomatic negotiations continue, it is perhaps easy to forget the human drama being lived by the islanders been banned from travelling to the islands since the invasion The long-range guns have took place. But it is possible

of what life must be like.

General Menendez said over the weekend that the islanders remained "distrustful" remained "distrustful" of Argentine troops, but that is understating the fears of the 1,800 islanders. "The military build-up is now so great that any attack by British troops would provoke a bloodbath, in which many islanders would be killed," said Sr Jorge Bardot, a Spanish businessman, who was recently evacuated from the

Jimmy Burns in Buenos Aires surveys the islands in the eye of the storm

Falklanders resist Argentine blandishments

So great are the fears of the local population that the bead of the Anglican Church in Argentina, has offered 10 go to the islands from Bueno Aires to contribute to "their serenity." He said over the weekend that he would be accompanied by members of the Anglo-Argentine community, who would make an effort to impress upon the islanders the good relations that bave always existed between Britons and Argentines living on the mainland.

The hearts-and-minds campaign has, so far been spearbeaded by the military authorities. Although they imposed severe restrictions on the movement of civilians immediately

Britain's naval blockade went into effect around the Falkland Islands yesterday but the possibility of any immediate clash between British and Argentine forces appeared remote. Britain said it would sink any Argentine warship within 200 miles of the islands.

after the invasion, these have now been lifted and significantly there is now no state of sieee as has been enforced on the

mainland since 1975. Before the invasion news-papers in the Falklands used 10 carry regular reports about human rights violations in Buenos Aires. Clearly, though, the military authorities have maintained their kid-glove approach to the inhabitants in view of possible future moves at the negotiating table.

Equally subtly, the Argentines have moved to consolidate their hold on the islands hy linking up the local radio with the mainland and introducing an Argentine-speaking tele-vision network. Islanders are reported to have been offered free television sets by the authorities and have been told that they can look forward to seeing Argentine coverage of World Cup football in June,

The oational news agency. Telam, has set up offices in Port Stanley and now provides the only regular flow of news from the islands, since other Argentine journalists have had their visits restricted.

arrived on the islands to replace English women wbo, before the invasion, used to travel to the more remote areas to supervise lessons with the families of sheep farmers.

المكدامن الأجل

The Argentines have also sem food ann supplies to the islands during the past few days, as a precaution against the British blockade, and the Argenline peso has replaced the pound in commercial transactions. At least one Argentine bank, the Banco de la Nacion, is preparing to set up offices to Port nical talks in Brussels tomorrow.

to seduce a people whose British values are deeply entrenched and who are reported to regard the fact of the invasion as a challenge to their right to selfdetermination.

Argentine journalists, who were hriefly allowed on the islands a few days after the invasion, were genuinely sur-prised to discover the cultural divide and that the kelpers still resented what Buenos Aires had presented as a "liberation."

One defiant interviewee told a haffled Argentine journalist that his name was Mickey Mouse and that the only thing he wanted to know was how soon the Argentine troops were going to get out.

In a more sombre mood, the local Roman Catholic bishop said that it was difficult to accept such a massive military presence, when the islanders had lived perfectly well for over a hundred years with little crime and less than four policemen.

Behind the islanders' defiance remains their one surviving link with Britain-the World Service of the BBC, which broadcasis daily messages of support from British officials and un-censored reports ahout the Argentine teachers have hectic diplomatic manoeuvring. UK's

EEC trade ban will follow talks in Brussels

BY GILES MERRITT IN BRUSSELS

THE EEC trade ban against Argentina, secured by Britain from its Community partners in a lough diplomatic tour de force over Easter, is expected to he implemented immediately following a brief round of tech-

Despite their efforts, the tives to the EEC of the 10 memmilitary authorities are facing a daunting task in their the economic sanctions against Argentina that Britain requested a week ago and obtained in a Brussels diplomatic demorche of unprecedenied speed.

The main purpose of the ambassadors' further meeting is to synchronise the national measures that the Community countries have agreed to take under Article 224 of the Treaty

The intensive consultations of April 9-10 in Brussels settled on that device, rather than on the more supernational blanket measures of Article 11:1 that ran into opposition from Denmark, and it is, therefore, necessary that the member states' own trade embargoes

that they dovetail effectively. The permanent representatives are also expected to review the status of the European Commission's prinosal of last week Argentinian products should be denied preferential access to the FEC under the Generalised System of Preferences. But it is anticipated that such a move will now dropped as being redundant following the total trade han.

The rapidity with which the

THE Argentine Ministry has called in Ambassadors from EEC countries to protest against the EEC ban on all imports from Argentina, Renter reports from Buenos Aires. Ministry said the Ambassadors had been told of Argentina's profound displeasure over the han.

agreed to freeze all EEC-Argentinian trade-worth some \$3.5bn ift.9hni a year — has been in marked contrast to the confused and dilatory fashion in which previous trade sanctinn demands, initiably against the Soviet Union following the Mghanistan and Polish crises, have been treatest.

It is thought that Britain will shortly attenue to harness this new political solidarity with further diplomatic initiatives against Argentina.

Reuter adds from Buenos Aires: Argentina has condemned the FEC ban on its imports over the Falklands dispute as an act of grave hostility, and has announced that imports from should be serminised to ensure EEC munities will be subject to government approval on a case-by-case hasis.

The EFC ban will strike a harsh ldow at the Argentine eronomy, closing a market which has absorbed about one quarter of the country's exports. Most of Argentina's exports to the EEC consist of agricultural products, particularly meat and oilseed derivatives.

The EE1 hought \$1.67br worth of Argentine goods in 1980, onl of Argentina's total Community partners exports of 87,36hn in that year,

'Truth squad' to put Galtieri's case abroad

A GROUP of Argentine politi- Sr Francisco Cerro, the ctans has formed a "truth Christian Democratic Federa-A GROUP of Argentine politisquad " that will visit the U.S. and other countries to explain the position of General Leopoldo Galtieri's government in its conflict with Great Britain over the Falklands.

The politicians, representing Argentine news agency Noticias squadron oo manoeuvres near tions" in several countries.

Antonio Cafiero, Economics Howard Baker and Edward borders Uruguay. Kennedy, the politicians said. Agencies

tion leader, and Progressive Democrat Sr Rafael Martinez Raymooda are set to visit Italy and Spain, and Sr Italo Luder, a Peronist and former Senate President, is to travel to the U.S. and Spain.

Brazil is sending a naval miano Fonseca has said.

He told reporters at the week-Minister under former Presi- end that sbips would leave Isabel Peron, was due Brazil's main naval port in Rio to travel to the U.S. yesterday de Janeiro for the waters off to seek meetings with Senators Rio Grande do Sul state, which

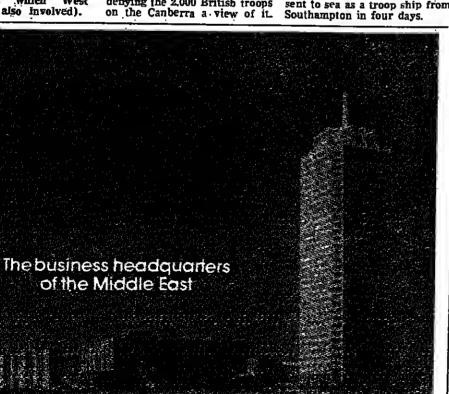
Spy ship drops back

as it sailed towards the Falklands.

A frigate-sized Soviet intelligence vessel dropped back over the horizon during the night, denying the 2,000 British troops

A SOVIET ship continued to It is now believed to be about track the Canberra yesterday 12 miles astern. British officers Russians cannot fail to have

heen impressed by the speed which the luxury cruise liner, chartered by the Navy last Monday, was sent to sea as a troop ship from Southampton in four days.



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Association members are

working on international engin-

cering projects with a total capital value of £46bn. The

Association says that consul-tants have benefited from

British designers' high reputa-

tion, particularly among oil

exporters and other big capital spenders in the developing

The oft states may provide

less rich source of income

now that many Opec members are suffering a spending

squeeze. But engineering con-

sultants point out that there are still a lot of other countries to

go round. British consultancy

expertise was on show at a three-day conference in Bombay

earlier this month, arganised by

the Committee on Invisible Exports to woo contracts from

Indian husiness. UK consul-

tancy carnings stand to henefit from the £380m package of

orders for the Singraul power

station and coal mine now under

one third of the world's super-

tankers are idle-and when

industrial states profiting from

the freighters and tankers flying

flags of convenience are ex-

pected to opose any restrictions

The UN Conference on Trade

and Development (Unctad).

per cent of the world's shipping

tonnage sails under the flags of

Liberia, Panama, Singapore or 12 other states which allow

foreigners to register ships.

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Dec. '81

Financia)

David Marsh analyses Britain's traditionally strong 'invisibles' export sector

Profits overseas boost current account

+439

on the travel account, in 1981.

Financial services showed an

increase in earnings of around

16 per cent, somewhat ahead

£1.8bn, financial earnings are now only about two-thirds of

the overall surplus from

"other" services, where con-sultancy earnings in particular have been holding up well.

"Other" services comprise a myriad of often obscure sources of overseas invisibles earnings

whose growing importance is often overlooked. Altogether, this sector contributed £2.8bn

to the balance of payments last

year, after £2.6bn in 1980.

inflation. But at about

BRITAIN'S 'INVISIBLES' BALANCE OF PAYMENTS

PRIVATE SECTOR SERVICES

(Net figures, im)

+1,025

+ 575

1979

+ 121

+ 288

+ 688

+1.584

+2.073

troe: Central Statistical Office, Bank of England

+ 208

+1,555

+2,587

this sector also includes receipts

from overseas students and

journalists (which has been in-

creasing as a result of higher

British student fees, and spend-

ing in the UK by foreign

The sectoral breakdown for

1980 — full 1981 figures are

not yet available — show Britain's overseas earnings from

construction and consultancy to-

gether with research and development, at £1.2bn. were

only slightly less than total earnings from financial services, which came to £1.60n that year.

The Association of Consult-

UN guidelines on

flags of convenience

Ing Engineers, which represents the 120 major engineering con-sultancies engaged in work

drawing up guidelines this week

to limit flags of convenience,

the foreign-registering of ships

which critics say disregards safety and labour laws and

barms Third World shipping

The 17-day meeting opening

today will seek agreements on

ship manning, management.

part of a future international

pact to han what is known in the

trade as open registry shipping.

It comes at a time of slump

ng and identification as

for the shipping industry-about Reuter

Exports

Exports

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World Economic Indicators

TRADE STATISTICS

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18,704

19,090

Jan. '82

4.278

4.410 -0.132

10,246 11,045

-0,799

51.54 58.59

industries.

W. Germany DMbn

UK £br

Japan U.S.Sbr

France FFr bn

BY ANTHONY MORETON, TEXTILES CORRESPONDENT

badly last year. Imports are estimated to have risen by 7 exports dropped by 16 per cent.

The figures show that British trade with the Common Market is growing. The amount of goods coming from the 10 EEC countries rose by 26 per cent compared with a rise of nnly 3 per cent in those originat-ing in low-cost Third-World

According to the British trends which will become more Textile Confederation the UK apparent in future years as the had an adverse balonce of trade consequences of the recesssion during the year of £1.04bn, of and cut-back in the domestic which clothing accounted for industry come to the fore.

These figures, as the BTC Man-made fibres points out, have to be treated with some caution. Because of the long strike by civil servants last year there are still un official figures for imports cover-ing the five months from April to August, and for experts from March to August. The Confederation has produced its 1931 totals by grossing-up, or annualising, the totals available.

It will probably he the middle of this year before the backleg of figures for 1981 is pub-lished. When the definitive totals became available, however, they are unlikely to be radically different from those now produced by the BTC.

The rise in imports last year followed a fall in 1980. What is particularly disturbing is that while there was a 7 per cent rise over the whole year, the city.

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THE ARMY BENEVOLENT FUND

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BRITAIN'S trade balance in growth in the last quarter was textiles and garmeots slipped 15 per cent. This one quarter accounted for half the year's increase.

> The reverse experience seems to have occurred in export markets. Although there was a big fall in exports-16 per cent -over the year the final quarter saw just a 1 per cent drop. Clothing exports managed to hold their own much better than textiles and only ended the year slightly worse than in 1980.

The figures starkly hide some

The major part of the increase in imports from the EEC was in two areas - man-made fibres and carpets. The former was due in great measure to the reduction in UK capacity over the past two years and is unlikely to improve when the economy picks up. Britain is now much more dependent on overseas suppliers for its fibres than it was in the late 1970s.

The report also draws attention to the high level of imports of certain goods from certain countries, especially cotton yarn from Turkey and knitted under-wear and dresses from South

The fall in exports was also due to a considerable extent to the fall in UK productive capa-

BSC wins £10m export order from Kaiser Steel BY ROBIN REEVES, WELSH CORRESPONDENT THE BRITISH STEEL COR- barite - a key element in drill-

ALMOST unnoticed amid the ably of close to £5bn. (The

exact figure is not yet available

because of the effects on data

collection of last year's Civil

around £3.3bn, also seems

likely to have been one of the

largest ever registered. The

improvement was due mainly to

a sharp rise in the surplus in

one of the three components of

the invisibles account-interest

profits and dividends, which

were boosted partly by higher

earnings on Britain's stock of overseas investments built up

after the ending of exchange

Of the other two components.

sector and from

were little

the contribution from both the

transfers (both Government

Within the services account

-which is where Britain's in-

visible exporters jostle for

positions-there have, however,

been important developments.

The travel industry as a

whole no longer figures as a

net earner of foreign exchange. For the first time since 1967. Britain had an overall deficit

and private)

The surplus on invisibles, at Sea transport - 80

Service dispute.)

publicity surrounding announce-

ment of Britain's record £8bn

current account surplus last

year, the Government has pub-

ished figures showing signifi-

cant shifts of importance among

the country's invisibles ex-

The surpluses manifest chalked up by the financial sector — banking, insurance.

commodity trading, and so on-

remain buoyant. But the City's place as Britain's top exporter of services has come under

serious challenge from consult-

ancy and construction com-panies winning an increasingly

important share of the world's

has always been characterised

hy deficits in visible trade and surpluses in invisibles. Since 1816 there have been only seven

annual visible surpluses and two deficits in invisibles.

torted last year.
A combination of buoyant

exports, self-sufficiency in oil

and a recession-induced slump

in imports pushed the visible surplus to a record figure prob-

The normal pattern was dis-

invisibles" market. Britain's balance of payments

PORATION'S strip products group has won a £10m export to supply the U.S. Kaiser Steel Corporation with 75,000 barite mill at Wuzhon in tonnes of steel slabs, for Guangxi Zhuang province in delivery by the end of the year. south-west China, built for The contract, which could be

the first of a series is to be loaded at the BSC's Port Talbot works, South Wales where Kaiser's requirements, according to BSC, complement Port Talbot's product range exactly. Mr Peter Allen, a managing director operations, attributed the order to the improvement in Port Talbot's cost competitiveness, following BSC's "slim-

 KCA Minerals has won a \$13.5m (£7.5m) one-year conto provide Pemey

line" redundancies two years

ing fluids. The barite is being supplied from China where KCA has just completed a new barite mill at Wuzhon in the Chinese as part of a 10-year trading agreement with the China Nationals Metals and Minerals Import/Export Corporation (Minmet).

Rediffusion Radio Systems has won a £2.3m contract to supply communications systems to the Government of Ghana for the supply of civil aviation communications systems. The initial order, which was won in competitive tender, bas since been extended.

The principal part of the order covers the supply of a comprehensive system for the Mexico's state oil company, with flight information centre at 115,000 tomes of powered Kotoka Airport in Aocra.

Saudi financing for Italian project

mechanical and electric unit of The first, of SR 30m, will carry a the Pesenti group, has obtained fixed interest rate slightly a loan of SR 90m to finance below the Bahrain interbank Jubail in Saudi Arabia, coonected to a seawater isation plant The loan is in two tranches, AP-DJ

each repayable in two years. the building of turbines for a rate for the first year and a thermoelectric plant at Al variable interest rate for the second year. The SR-60m second tranche will carry variable interest linked to the three-

Shipping report

Poor outlook on productivity of hulk fleet

THE CRISIS in the Falkland Islands left shipping markets relatively unperturbed last week, but the overall state of the industry continues to cause

In its comprehensive annual

around 9 per cent of the present bulk carrier fleet. The growth in combined oil and bulk carriers is expected to be slower, however, causing a rise of nearly S per cent in the total tonnage on the bulk markets.

But transport requirements are unlikely to rise hy anything like enough to use up all the available capacity, based on the likely state of the world economy. "This leaves us in considerable doubt as to the future productivity of the bulk situation would be

portant factor affecting international shipping this year would be the state of the world

Mexico inaugurates its first Pacific oil port

The port, built at a cost of \$108.8m. has storage capacity for 2.5m barrels and can take tankers up to 250,000 dwt. Mexico has two other ports for oil exports, both in the Gulf. The new port will be mainly used for oil shipments to Japan which is viewed as a potentially the long term. At the moment Japan has contracted exports

Oil is pumped over the Isthmus of Tehuantepec to Salima Cruz from Mexico's major

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Apart from overseas construc-tion and consultancy earnings,

By Our Shipping Correspondent

"The future looks bleak said R. S. Pleatou, a leading Norwegian firm of shipbrokers, basing its pessimism on the amount of dry cargo ton-nage shortly coming into opera-

shipping review. Pleaton said:
"We feel justified in asking whether the time has not now come to consider cancellation, or at least postponement of delivery, of the latest deliveries of bulk carriers on order.

New ships scheduled for delivery this year represent

The biggest expansion is expected in the Panamax fleet, comprising vessels of 60-80,000 leadweight tonnes which are the largest than can go through the Panama Canal. This sector lld move up by per cent in 1982, Pleatou calculated.

nage such as that seen in Hamp-ton Roads on the U.S. east coast early in 1981 when ships were queuing up to take on coal. But Pleatou thought such a develop-ment looked unlikely. It concluded that the most im-

The Mexican Government has officially inaugurated its first oil export port on the Pacific Coast at Salina Cruz, William Chislett writes from Mexico City.

from Mexico for 140,000 b/d.

onshore and offshore fields

away from it all we really mean It.

China and U.S. sign photocopy abroad, reports that its members' overseas fecs last year rose to close to £490m from £425m agreement

By Tony Walker in Peking

China has agreed to pay \$5.5m to a small American company for the supply of photocopying machines and technology in a further sign of its return to normal heat.

Agreement was signed at the week end by Clark Copy International Corporation and the China Import and Export Corporation for the shipment of 1,000 photocopying machines by the U.S. company and components for another 5,900 to be assembled at a factory in Gullin, south China.

Under phase two of the agreement, the U.S. company with assist the Chinese in manufacture the machines at the rate of 200,000 a year for domestic use and export. Clark Copy International, a small Chicago-based company, beat off challenges from big rivals like Xerox and IBM for the Chinese contract which

will run for 20 years.

Mr Otto A. Clark, head of
the corporation, said in
Peking that his machine was cheaper and more compact than models produced by

The American company is expecting to receive some \$60m payment over 3-5 years for companents it supplies to China for the copying machines.

Ricoh reaches marketing deal

RICOH, the largest Japanese producer of photocopiers, bas surprisingly renewed its European marketing agreement with the U.S. company Nashua after a two-year split. The new agreement, which runs to 1990, is claimed to be worth £100m.

Ricoh claims to produce more copiers than any other company in the world, although by value Xerox sales are considerably higher. Until recently Ricon products were sold in Europe by both Nashua and Kalle Infotech. a subsidiary of the German chemicals company Hoechst. Two years ago Ricoh

announced it would enter both markets directly and would not renew its contract with Nashna, which ran out in 1983. Faced with the prospect of losing its product Nashua tried to manufacture coplers itself and falled, the U.S. production line was closed about six weeks ago.



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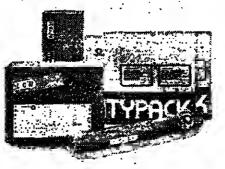
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(AND REMIND THEM HOW FAR THEY'VE STILL GOT TO GO.)

Molvo 52441D)L	136998
Ford Granada 2:3L	£7600
AudilOOCL	£7653
Rover 2300	£7970
Mercedes 200	£9130

Local sites rejected for \$20m factory

By John Elliott, Industrial Editor A MILK products factory coating \$20m (£11.4m) is

being planned in the Nether-lands by Bristol-Myers, a U.S. hased pharmaceutical com-pany, which has rejected two sites in the UK.

But the company yesterday denied suggestions made by Mr Patrick Jenkin, Industry Secretary, that It bad decided against the UK because its executives had been caught recently in Britain's train drivers' and airport baggage handlers' strikes.

Mr Jenkin met senior Bristol-Myers executives during a recent 10-day toor of the U.S. He said be also met at least seven American coming expanding their British plants. These companies were impressed by the UK's improved labour relations.

"But one company—Bristol-Myers—said that they were convinced by the combina-tion of the baggage handlers' and railway strikes that nothing has changed and they are going to Holland instead of building in Wrexham," said Mr Jenkin on his return.

You can't keep Americans waiting for two hours for their luggage and then the next day have no trains to take them where they're think-ing of investing," he added. Mr Leroy McBrien, a vice-president of the company in

New York, who met Mr Jenkin yesterday denied that labour relations were a factor in the decision. He had told Mr Jenkin that strikes like the baggage handlers' damaged the international view of British labour relations, inspite of the overall improvements: COMPANY executives had not been

"It is ridiculous to say labour relations stopped ns investing," be added.

The company's board would be recommended during the next two months to build in Holland. The UK has been "very close to being a possibility," but bad lost out because of a combination of factors including inflation forecasts, construction costs and availability of raw

materials such as mlk. In any case, Bristol-Myers, which already has four pro-duction sites in the UK employing 700 people, is carrying ont a £6m pharmaceotical expansion project in Cramlington in the north-east. The other American companies which Mr Jenkin said

were considering expanding in the UK included American Can. Pitney Bowes, Alcoa Allegbeny International which owns Witkinson Match and Raytheon which owns Cossor. From California's Sillcon Valley area, Tandem Com-puters, which is expanding at 80 per cent annually and Dysan, which makes computer discs, were also considering UK expansion.

Expansion for Mercantile House

MERCANTILE House Holdings, the leading London money broking company that recently acquired Charles Fulton Holdings for £6.5m, is planning to expand its fund eranagement activities into

The group has set up a new fund management subsidiary and taken on Mr Alan Maid-ment as one of its directors. Mr Mathment annonoced carly last month that be was resigning as managing director of the Britannia Group of Investment Companies, after 13 years with the former Slater Walker subsidiary.

Rolls-Royce wins Saudi contract

Rolls-Royce has been awarded the contract to equip an overhaul hase for RB-211 engines, being set up in Sandi Arabia at a cost of £25m by Saodia.

The Saudi national airline is tha largest operator in the Middle East of RB-211-equipped Boeing 747 and Lockheed TriStar passenger jets, of which it has a total of 19. Rolls-Royce is also to carry out initial training of Sandi staff at the base.

Enterprise zones rates revisiou

BUSINESSES just outside new enterprise zones may qualify for a rates revision if they can show that creation of the zones constitutes a change in locality," says Mr Nicholas Ridley, Treasury Minister.

CEGB plea on coal imports hits a sore point

BY MARTIN DICKSON, ENERGY CORRESPONDENT

THE Central Electricity Generating Board (CEGB) has told the Government it wants to increase substantially its coal imports this year-a move which could provoke conflict with the mining

The CEGB's plan poses a dilemma for the Government. It must decide whether to allow the increased imports or to renew an agreement reached last year under which the board irreducable minimum."

The agreement kept CEGB imports to 750,000 tonnes in 1981-82 instead of the 2m tonnes planned. It formed part of a coal industry rescue package, assembled by the Government in February when it was threatened with a miners' strike

received financial compensation until 1983 to buy 2m tonnes a good price if it tried to sell the portion of the 75-80m tonnes of tional security of supply.

for keeping its imports to an year of Australian coal. Because Australian coal on the conceal the CEGB burns each year.

During the past few imports to an order of the conceal that transfer and the conceal that transfer are the conceal that transfer and the conceal that transfer and the conceal that transfer are the conceal that of last year's import restrictions, It has been stockpiling this in Rotterdam where it now has

Because the international coal over pit closures.

The CEGB is under contract plentiful, it would not obtain a Imports repr

Discussions with the Depart- the National Coal Board. ment of Energy appear to be at an early stage. The CEGB would only say: "We have had in the world market. It was stressed recently that it inis no decision yet on what the Imports represent a small pro- prices and also gives it addl-

With an additional 2m tonnes only say: "We have had in the world market. It was stressed recently that it increases imports. Because the intermediate of the cell of the cell

During the past few years, At least 75m tonnes comes from imported coal has generally had a price edge over NCB supplies

The CEGB argues that import tiations with the NCB."

The cegB argues that import tiations with the NCB."

The competition, bowever limited.

The covernment's limitation on imports came in for sharp

Commons Select Committee 00 Energy, which said: "The in-terests of the consumer and taxpayer were not uppermost in the minds of ministers when they reached their decision."

However, any move to incrosse coal imports will be attacked by the National Union Mineworkers, ... which ... will regard it as a threat to British

NCB faces multi-million tonne problem in Scotland

MR BILL SWIFT has a multi-sales to the South of Scotland million tomne weight on his Elactricity Board (SSEB).

As marketing director of the National Coal Board (NCB) in Scotland, he faces the difficult task of selling 8m-9m tonnes of coal this year—at a time when the market for the fuel has shrunk dramatically.

Throughout the UK, the NCB's markats have been hit by the recession. But Scotland is suffering more than many of the other 11 areas into which the NCB divides the country. "There's no doubt we have a major marketing problem for the next few years," says Mr Swift. A blow fell on New Year's closed its smelter at Iover-gordon in the Highlands, because of the high cost of

That means lower demand for electricity—and therefore lower demand also for coal to hurn m power stations. Unless Invergordon opens again—and a the NCB is undertaking a major rescue package now appears drive for alternative markets—unlikely—the NCB will lose particularly abroad. During the about 750,000 tonnes a year m past year, Scotland has ex-

An even bigger blow will fall this summer when Peterhead power station starts to hurn natural gas liquids (NGLs) from the North Sea. Peterhead has in the past run on oil, making it more expensiva to use than Scotland's three coal-fired

But in the interests of energy conservation, Peterhead is to use NGLs which would otherwise be wasted for the next three to four years, until tha large petrochemicals complex being built at Mossmoran, in Fife, is ready to use the NGLs as a feedstock. The liquids are expected to replace more than 1m tonnes of power station coal a year until Mossmoran comes on stream in 1985/86.

SSEB likely to fall from 7.5m-8m tonnes a year to 5m-5.5m tonnes over the next few years, the NCB is undertaking a major

COAL IN SCOTLAND

ported its first coal for a Despite the export drive, the NCB will probably have to put stock over the coming year, increasing the costs of what is

Rie losses must in turn put increased pressure on the NCB to shut down its most unprofitable, elderly capacity.
Old pits and difficult geologi-

already one of its heaviest-loss-

Martin Dickson

explains why stockpiles are likely to mount for several years

cal conditions mean that Scotland'a pits hava been in dacline for years. During the past five years, production from deep more than 1m tonnes of coal to mines has dropped from over 8.5m tonnes to 7.15m tonnes in 1981/82. Eight pits have closed, leaving 14 in production, and manpower has dropped from 22,100 in 1976/77 to 17,500 now. But the idea is to stabilise

deep-mined production at about

three of which are closed for major development work. This programme, combined with the closure of exhausted old pits, has led to a 3-4 per cent rise in productivity over the past

The iovestment programme is modest compared with those the NCB is undertaking in other parts of the UK. But local NOB officials hope it will change a deep-mining operating loss of £29m in 1980-81 to break-even by the mid-1980s.

However, as Mr John Loudon, the area's deputy director admits: "Much of that expectation depends on markets and prices over the next few years."

So what are Scotland's sales prospects in the 1980s? On the

capacity of 2.5-3m tonnes, will over the past year through the give Scotland a total output of port of Leith, mainly for the Scandinavian market. A further 500,000 tonnes a year is going To stop the decline, the NCB out through Ayr to Northern Ireland. is spending £105m on the modernisation of Scottish pits,

Lack of port capacity makes It hard to export more at present. But the NCB has beld lengthy discussions with British Steel on the possible use of year, and a similar improvement the corporation's Hunterston is expected in 1982/83.

The NCB would bave to spend some £3m to turn Hunterston into an export terminal, but It would then be abla to push about 1.5m tonnes a year through the port in vessels of very large tonnage - provided it could sell that much.

However, last year's shortage of global coal supplies has turned into a glut. It is questionabia whether the NCB will reach its target.

Against this background, Scot-land's coal stockplies look like mounting for several years to come, posing either a threat to jobs or a substantial cost to the 7m tonnes a year. This, together export side, the NCB has man-with profitable open-cast mining aged to ship out 500,000 tonnas taxpayer in ald to the NCB.

Solid fuel prices cut

EASTER MONDAY was cut-price-coal day for house-holders throughout the UK. Until July 31, supplies of solld fuel from the National Coal Board (NCB) and its subsidiary National Smoke-less Firels to coal merchants are reduced in price.

There is £5 a tonue off house coal and authracite atovesse and stove muts, 27 a tonne off all other domestic grades of anthracite, Weish dry steam coals, sunbrite and homefire, and £8 a tenne off phurnacite and firegle.

NCB chairman, Sir Derek Erra, said: "Householders stand to gain substantially by ordering their coal now. With these reductions, and the industry's successful efforts to keep the last price lucrease well below the level of in-flation, coel is now a particularly good buy."

Coal merchants reduce their retail prices in the early sum-mer to help householders to save money by stocking up for the following winter.

Glossy draw

of mail order

WOMEN'S clothing and personal

products, such as jewellery,

dominate the response to mail-

order advertising in the nice

Clipper, a research service

launched this month hy Market-

ing Direction, a marketing and

research consultancy, says these

two types of product accounted

for 37 per cent of all direct

response, mall-order advertising

in the five Sunday colour sup-

Barclaycard

adverts

months to March.

plements and

Clothing

By Belinda Nenk

Cap and gown-and underpants

By Anthony Moreton, Textiles

AN UNLIKELY allianca has just been made between one of Britain's leading manufacturers of men's underpants and one of its oldest universities.

The object: to produce better and cheaper underpants and more comfort for men, and to repulse cheap foreign under-wear and provide more work

The link is between Lyle and Scott, maker of the renowned Jockey and Y-Front brands, and Durham University. The company, part of the Courtaulds group, has put up £105,000 over three years. This has been three years. augmented by another £75,000 provided by the university from a Science Research Council

Research

The research programme will investigate ways in which cobotics could help maintain profits in a highly competitive market. Lyle and Scott hopes that the results will revolution-ise automation in the needle trades, not only in its own Dunfermline, Carnoustie and Gates-bead plants but throughout tha

Like so many companies in the garment industry. Lyle and Scott is heavily dependent on women workers and traditionally faces a high staff turnover which averages at around a third of all machinists each year.

Mr John Russell, managing director of the company's Jockey division, states that it is looking for ways of ensuring that training costs are not dissipated in staff turnover. Robotics could provide the answer, be believes.

Training

By combling skills to be built into machines, workers could be cheaply trained in several jobs. Mr Russell foresees considerable savings in training times as well as improved

"Robotics could enable us to be in business and prospering in 10 years' tima. The majority of the textile industry is vuinerable to low-cost imports and new technology could help home producers to remain competitive."

Lyle and Scott bas already had considerable success with new machinery. At Gateshead a metering device for elastic waistbands ensure that sizing remains uniform throughout the production line.

the device enables workers to turn out goods faster and more accurately, improves productivity and allows higher wages.

Using micro-chip technology

Colleges and industry forge research links

BY DAVID FISHLOCK, SCIENCE EDITOR

GOVERNMENT Initiative in potential. ancouraging British universities and industry to collaborate more closely in exploiting genetic the Depengineering, is already claiming at UCL. tangible success.

Two collaborations have fust been announced in London, and a third involving a consortium of large British companies The Government's Science and

Engineering Research Council set up a biotechnology direc-torate to help such work. The directorate expects to spend 52.5m over the next five years In encouraging links hetween universities and industry. Both the Government and Industry believe this is more

to advance national likely Interests in bio-technology than the creation of 20 or more university posts, as the Government's scientific advisers recom-mended in the Spinks Report in 1980. University College, London,

has won a contract worth about £140,000 from a U.S. company to develop a production process for a powerful new pain-killer, called pancreatic endorphin. The endorphins are natural proteins, which act like morphine, but are free from tha addictive side-effects.

great commercial technologies.

Endorphin Inc, a Seattle company, placed the contract with the Department of Blochemistry

Imperial College, London, and Technical Development Capital (TDC), the high technology arm of Finance for Industry, have formed a company, Imperial is at an advanced stage of Biotechnology, to market con-planning in Leicester. tract research and liew-process manufacture at the pilot fer-mentation plant of the college's department of chemistry.

The company has announced its first commercial contract, to make a range of biologically active agents for genetic engineering research, for sale by Cambridge Biotechnology Labo-ratories, a subsidiary of V. A. Howe and Co.

TDC is making an initial investment of £400,000 in the venture, which is estimated to be costing £250,000 a year to operate. Equal shares in the equity of

Imperial Biotechnology will be held by Imperial College and TDC. The most far-reaching initia-

tive so far is still being worked out between the Department of Blosciences at Leicester University and a consortium of major, non-competing British Pancreatic endorphin is companies. They hope to set believed to he able to reach the up a national bio-centre at Leibrain after intravenous injec- cester University to tackle gaps tion, and could thus prove to in the national annoury of key

Carbodies' farm truck conversion

Financial Times Reporter

CARBODIES, the London cabmakers, is entering the agricultural market in the autumn with converted Range Rover designed to meet demand for a fast, lightweight vehicle for spraying, pesticide and other

Coventry

The Coventry company has spare capacities for up to 100 other vehicles a week. The Unitruck uses the front of a Range Rover with a crew cabin, hehind which is a pickup hody capable of carrying up to 11

An impervious barrier isolates the passenger compart-ment and allows agro-chemicals to be carried. Provision is also mada for attaching equipment. Up to threefold increases in productivity over conventional tractor operations is claimed.

Attachments

The £13,500-£14,000 Unitruck is roughly equivalent to the Fleetline Range Rover in speci-fications. With sprayer attachment the price is expected to be

The Grant Lockhart, managing director of Carhodies, said the company bad an application before customs and excise to relieve the Unitruck of car tax, which is about £1.000, With VAT, this amounts to some £3,000 for the whole vehicle."

Upturn expected in engineering sales

dustry, which has strengthened Its profits by cutting its costs, is expected to enter what Laing & Cruikshank, the London stockof recovery by increasing its volume of sales.

In a quarterly review of the engineering and motor acctor, it suggests that capital spending on plant and machinery, after reaching its lowest point in the third quarter of this year, will recover. By the first quarter of 1983 it should be about 4 per cent higher than the 1981 average and possibly 14 per cent bigher than the lowest point in

THE British engineering in fall in numbers employed, and a 7 per cent rise in sales prices, it expects margins to improve from 2 to 5 per cent during 1983. Also in 1983 the upturn In capital investment and recovery, in overseas markets should permit a volume increase of 6 per cent.

However, the growing recession in South Africa maans that companies which bave relied heavily on trade there will see profits cut. Other UK engineering companies will be hit badly their involvement in the U.S. motor industry, which slumped in January.

Although most UK companies in the machine-tool industry are Assuming a 4 per cent volume there are signs that the worst is

Women's clothing attracted kitchen, dining and personal products fetching more than £2m each. In terms of overall direct

response expenditure, the Sun-day Express Magazine is getting the greatest revenue (32 per cent), followed by the Sunday Times Magazine (22 per cent) and the Sunday Telegraph Mogazine (19 per cent). The News of the World's SunDay magazine is struggling to peoetrate the market, with only 11 per cent of all revenue.

Clipper appears to dismiss the idea that a better response

to mail-order advertisements is achieved by taking right-hand During 1981, 7.5bn coupons

were distributed in Britain. according to Nielsen Clearing House, the coupon handling company. A 60 per cent increase on the total in 1980 largely resulted from retailers distributton of coupons, previously used almost exclusively by manufacturers.

Coupons

More exhibitions planned

aimed at encouraging British companies to pick up orders for

products curreotly imported into the UK.

The news follows the overwhelming response to the "Can You Make It?" exhibition which opens at the Confederation of British Industry's Centre Point headquarters tomorrow. At the exhibition about 50 large UK companies will be

MORE exhibitions are being rently being imported from planned for later this year overseas producers. These proaimed at encouraging British ducts, which represent orders worth £100m a year, will be on display at Ceotre Point, and more than 2,000 mainly smaller businesses have now mada firm

bookings to attend. To satisfy demand, the organisers have decided that the exhibition, which was due to end on Thursday evening, will stay open on Friday morning. The "Can You Make It?" seeking British manufacturers idea was the brainchild of the moreover for 600 of their products cur- London Enterprise Agency.

Legislation

"We are overhung with legislation from the horse and cart age and if we are to combat Japanese pickup imports and build up UK exports we need more up to date thinking," be

Mr Michael Pearce, a farmer and head of a Dorset agriculoriginal conversion, said he had to run over 20,000 acres of cereals once a month. That took too long in a tractor, which

brokers, sees as a second stage

increase in 1982, due to re-stocking, a further 4 per cent demand is expected in 1983.

Demand for new homes up

A MARKED upturn in confid- 1982, compared with only 31 ence is taking place among bouse buyers with an upsurge in demand for new housing, according to the House Builders' Federation.

of 273 bousehullders carried out in the wake of the Budget shows an improvement in all sectors of the market.

Mr Roger Humber, the according to 51 per cent of Federation's director, said the inquiry showed "that 1982 will they anticipated an increase of of the market.

It says that a quarterly survey

be an excellent year for bousebuyers." Some 57 per cent of companies reported an increase in interest by first-home buyers, Ralfact with only 7 per cent reporting a fail. Existing owner-occupier interest improved for 58 per

cent of companies, while only 11 per cent experienced a de-Both results compared favourably with the last goarter of 1981 when only 10 per cent of builders reported an improvement over the previous quarter,

says the federation. Expectations of future sales are consequently high, with more than half (57 per cent) planning increased starts in

per cent three months ago. An indication that house prices have stabllised, after

their recent decline, is reflected in the 59 per cent of builders expecting profit margins to be maintained or improved in 1982. Employment on building sites

Belfast airport Increased charges at Belfast airport have forced British Midland Airways to cut 14 jobs — most of the ground staff in Northern Ireland.

at least 10 per cent.

British Midland has labelled airport charges there as among the highest in Europe. The Association of Professional Executive Clerical and Computer Staff (APEX) has demanded an investigation into the cause of the staff euts, claiming his union had

Consumers redeemed 324m coupons, valued at £23m. io coupons, valued at £23m, 10
1981. This was 30 per cent more
than in 1980, the company said.
Consumers seem to prefer
coupons they have taken from
a pack. But more people are
using coupons delivered to the
door, often by the Post Office's
household delivery service.
Fifteen per cent of all coupons
redeemed were distributed 10 redeemed were distributed this way in 1981, compared to only 4 per cent in 1980.

New broom makes a sweeping start at Guinness

MR ERNEST SAUNDERS, the group managing director of Arthur Guinness, marked the start of his second six months at the company by selling most of the Guinness holiday interests to English China Clays PLC for what the City considered the good price of £13.2m.

It was the third such sale that Mr Saunders had completed within a month. It was also part of his effort to revitalise the brewing company, which became involved during the 1960s and 1970s, in such activities as film finance, plastics, holidays, and leisure goods, as well as the traditional brewing of stout. Guinness made pretax profits of £41.8m on a turnover of £905.6m for the year

ended September 26, 1981.

and Bowser, its loss-making group: What is the long-term confectionery subsidiary, to the potential of the business? What Chicago based Beatrice Foods can the company do to be more Company for £4m on March 15. efficient?

Last mouth, it disposed of To back these question are a 600,000 shares in Greene King, range of individual performance the Suffolk brewery, and of indicators, but all comparing 325,000 shares in Wolverhamp. Guinness performance with that

group, an animal medicines business, was sold in January to Grampian Holdings for £1m.

analysis. The share price rose from 53p on October 1 to 82p last week four main fronts. Meeting as many people in the UK, Ireland and continental operations as possible so as to get a feel for the business. Mr

advertising account with J. of companies that no longer fit Walter Thompson was taken Guinness's overall strategy after three months, when aimed at returning to its more Guinness decided that the advertising of stout, was too Baving got out of confecsional brights and the strategy and the strategy of ing rather than the brand.

tion. This change has been common in the rest of British

ment reviews, each conducted marketing have left the by a project development team.

The decision to end Guinness's Retrenchment—and disposal

handling division are very dynamic. Moulding work has been concentrated in two 1981, plants, instead of three, and Th

tied estate base and so is In a difficult position when bargaining with other brewers over trade discounts. Guinness, it is believed, now intends to reduce

the credit period Guinness's stout often costs considerably more in brewers'

managed houses than premium Profits in Ireland have come under strain because of increased taxation there on beer and the Irish punt's decline against sterling. This is especially important because the Irish subsidiaries' contributed 62 per cent of trading profits in 1980-

The review of brewing will Clares, a company that manu- be completed towards the eod factures and supplies supermarket shopping baskets, has
expanded its share of the
market.

Compress towards the exsix months and is
almost certain to call for improved productivity. Park Royal,
the main Guinness plant in west Guinoess still has serious London, lags behind similarproblems. The mainstay of its traditional business, stout. only accounts for 45 per cent of the UK beer market and Guinness scrutiny. Mr Saunders will start this more quickly, about tha company. So far UK beer market and Guinness scrutiny. Mr Saunders will start two sensor executives associated drinkers are an ageing breed, a series of oversees visits this with film financing and beer. The company has always lacked month to launch the process. with that The development.

Viking Resources International N.V. Curação, Netherlands Antilles

in the Annual General Meeting of Shareholders held on 8th April, 1982 a cash dividend of USS 0.43 per ordinary share was declared payable as from 20th April, 1982 on the ordinary shares against delivery of dividend coupon nr. 10 with

Pierson, Heldring & Pierson N.V. Herengracht 214
Amsterdam

Gareth Griffiths looks at Mr Ernest Saunders's progress ton and Dudley for more than of other companies.

£2m. The Guinness Veterinary

It was to ask these obvious, £2m. The Guinness Veterinary

The £20m-plus raised by the te company's bourowings in 1982-3 and to create greater flexibility in financing. But Guinness argues that as much importance should be attached to the fact that the company at last was seen to be acting, rather than talking about it. In the past six months, Guinness has been subject to a series of management reviews initiated by Mr Saunders. He asks two fundamental questions Guinness disposed of Callard of each of the companies in the

but difficult, questions that the Guinness family brought in Mr Saunders six months ago as a new broom. He had been on Nestié's central management committee in Switzerland and his meteoric career in international management gave him experience of the countries in which Guinness operated. His first six months were busy and the activity impressed City

sopbisticated for its consumers. • A change in emphasis of management style - towards marketing rather than produc-

The new broom was sweeping brewing, but Guinness management traditionally has been rather old-fashiooed in its approach. Many managars spend entire careers with the company and often are unaware of others' Saunders also set up a simplified methods and approaches. This company reporting system to shift will probably be more give him more information, gradual than those in other

tionery and the risk side of and when research showed that film finance, the company is people talked about the advertis- less keen on disposing of its plastics interests. It says parts of the plastics and materials

Petrochemical plant threatened in tax wrangle

BY SUE CAMERON, CHEMICALS CORRESPONDENT

THE Covernment appears to a comparatively-low, in-house be ignoring BP Chemicals' transfer price. The Finance demands for tax concessions on Bill would require the Inland materials and fears that the plants at Grangemonth in Scotland, are growing.

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10.00

and the party

BP Chemicals has made it lear to Ministers that the 250,000 tonnes - a - year petro-chemical plant will be viable only if it can be converted to use North Sea ethane gas as a raw material, as well as oil-based naphtha. But a £25m project for conversion would not be economic unless the company were to obtain tax concessions on the ethane gas from

the Government. The Finance Bill that followed the Budget evidently makes no provision for a tax deal with the company — although BP Chemicals said at the week-end its experts were still studying the relevant clanses.

What the Bill would do however, is to formalise a secret tax of the secret deal between Esso agreement made by the Government last year with Shell and last year. Esso-two of BP Chemicals' BP Che main rivals. Shell and Esso are building a £500m petrochemical plant, at Mossmorran in Fife, which has been designed to use ethane gas from their Brent field as raw material. Last year Esso Chemical wrung a special tax deal for the gas from the Government after threatening to acandon the Mossmorran

roject. North Sea ethane is subject to the usual 70 per cent is suffering massive over-Petroleum Revenue Tax, which capacity in basic petrois to go up to 75 per cent at the Shell and Esso will be using

North Sea petrochemical raw Revenue to accept in-house company may shut one of its as long as it were satisfied that they are comparable to prices that would have been agreed by unassociated companies.

This would effectively give Shell and Esso a free hand because there are no such comparable contracts for the sale of ethane as a pretrochemical raw material in the UK.

The Finance Bill also proposes that, once an in-house ethane transfer price is agreed between the companies and the Inland Revenue, it shall be binding, for tax purposes, for five years after the first delivery of the gas. At present, the Inland Revenue has powers to revise every few months the price it will accept for tax purposes.

The introduction of the new five-year rule is understood to have been one of the main parts. Chemical and the Government

BP Chemicals' problem is that it has little ethane gas of its own. It would have to buy ethane to go ahead with conplant, and it could find itself paying tax at a much higher rate than Shell and Esso.

The extra tax costs almost certainly would make BP's planned conversion of the The UK, like the rest of Europa, chemicals, so the alternative to conversion probably would be closure — particularly as the their Brent ethane at Moss-Grangemouth plant is old, hav-morran and will be able to agree ing been built in 1968.

Irish plan offshore gas pipes to foil terrorists

By Brendan Keenan in Dublin THE PROPOSED natural gas pipeline from Dublin to Belfast may be laid offshore as a way of preventing terrorist attacks.

This is one of the options being considered by Irish Republic and Northern Ireland officials who are considering the piping of gas from the Kinsale field off

The two governments have decided in principle that the plpeline should be built and the thinking hehind the off-shore installation, which would make little difference to the economies of the scheme, is that in shallow coastal waters, it would he much more difficult for terrorists to attack the line.

Mr Albert Reynoids, the new minister for Industry and Energy, has ordered an investigation into Irish energy prices, which are among the highest in Europe.

The Irish Government. which applies price control through a national prices commission, has already ordered petrol companies to cut their prices hy an ever-age eight pence a gallon.

More N. Ireland textiles jobs threatened

Workers at Dungannon are trying to avert the closure of Courtaulds' local dyeing plant. Tim Dickson reports

هكذامن الأحهل

Today, however, the 25,000 the Irish Republic. inhabitants of the town and a good many others in the embattled "province" tas Northern Ireland is often referred to locally) are hoping desperately that an Englishowned multinational will not go

For if Courtaulds, the UK textiles company, carries out a threat to close Brown and Adam. of the world famous Moygashel company. Dungannon will shortly become one of the worst unemployment blackspots in

Europe.
Already, 34 per cent of the nen in the area are out of a job but the proposed closure will take this figure to not far short of 40 per cent. According to the group representing the 300 workers at

Brown and Adam there are also severe doubts about the 460 remaining jobs in the Moygashei group and if these were to go the unemployment total could reach an unprecedented 50 per Moygashel became a publicly- in the year to March last year cent. (Confidence was not imquired company in the 1950s / which are still continuing. Com-

ON A CLEAR day, it is said, proved by the announcement on you can see all six counties in Thursday that Steegun, another Northern Ireland from the Countailds subsidiary in Bel-

this view is the site of an old been the main employer in a castle where the proud O'Neills, town which lies roughly 35 the Earls of Tyrone, kept the armies of Elizabethan England at its closest point is only about downmarket in viscose rayon at bay.

> It has one of the most impres sive histories of any textiles business in Northern Ireland. lts origins go back to the end of the 18th century when two brothers set up as flax merchants in the area.

Moygashel Mills, the factory which made and still makes these fibres into some of the most famous Irish linen in the world, was not started until

Many of the families who

worked in Movgashel in the early days are still connected with the works which lie in a small village of the same name on the outskirts of Dungannon. women contributed greatly to the growth of the business which merged in 1950 with a number of other Northern Irish family-owned companies to prograted textiles group encom-passing spinning, weaving,

dyeing and finishing.

before being absorbed by Courtaulds in 1968.

The reputation of Movgashel highest piece of ground in Dun-gamnon. The vantage point for Moygashel has for generations major market for the group. major market for the group. But in recent years (particularly under Courtaulds' ownership)

> Linen and linen mix, whose main advantage when used in clothing is its coolness but which creases easily and is expensive, today account for ooly about 20 per cent of Moygashel output. The com-pany's machines, bowever, still give the rayon fabrics a "linen look" which is an important marketing advantage in over-

scas markets. Courtaulds' decision early last month to close Brown and Adam and move dyeing and finishing to another site in Rochdale, Lancoshire, has come as a hammer blow to the whole com-munity. The 460 jobs which will remain in Moygasbel (about 190 of them at the Braidwater Spinning Company in Ballymena. Co. Antrim) compares with the 3,000 to 4,000 employed in the early

UK group took control in 1968. Courtaulds believes Brown It points to losses running into hundreds of thousands of pounds in the year to March last year

netition from cheap imports

and the recession in the textiles

sector are to blame, as well as

Around Britain: DUNGANNON

the high overheads of the Moygashel works. The works action committee. however, has other ideas and points out that the Movgashel group as a whole made a £im eoded. With the support of Ulster's three Euro MPs, local councillors and transport union officials are putting forward an £8.4m modernisation plan as an alternative to closure. Local management had already tried Courtaulds without

Northern Ircland Department Commerce (which would sumably have to provide the bulk of funds). Courtaulds and the action committee have so far failed to find an agreeable

According to Mr Ken Woods of the committee the Government "has already agreed to put up £4.5m. Some of us were told at a meeting with Mr chairman, that the company might reconsider if the Government could find 75 per cent of the £8.4m. The Government therefore has in find only another £2m which does not

the money they will need to keep people on the dole." Moygachel's skilled and loval workforce naturally feel that closure would bring about big waste of human resources.

seem much compared with all

Understandably, they also think that some of the funds which are apparently made so of Mr John Z. DeLorean could he spared to avert the threat

BP Chemicals has doubts on EEC wine agreement

BY OUR CHEMICALS CORRESPONDENT

BP CHEMICALS has expressed doubts about the safeguards designed to protect its synthetic alrohol business which have been written into a new EEC agroement on

"exceptional" distillation into pure alcohol of 6.5m hectosurplus. The cost of the exceptional distillation, in terms of EEC subsidies, has been estimated at £70m. But, at the insistence of Britain, the agreement includes guarantees aimed at prevent-ing the distilled wine alcohol being sold into the compara-fively low-priced synthetic alcobol-market:

BP Chemicals is Western Europe's biggest producer of synthetic alcohol and has just completed e 257m synthetic alcohol plant at its Grange-mouth complex in Scotland. mouth complex in Scottand.

The company said at the weekend that the winc distillation
agreement: "goes some way
to safeguarding the interests
of the synthetic alcohol industry."

But it had "some doubts on whether the safeguards are sufficiently strong." It warned the agreement itself could lead to further over-production of wine in Europe —particularly while the inter-vention price set for excep-tional distillation was so high BP Chemicals is thought to be less worried about the latest one-off agreement on wine distillation than about EEC proposals—still under discussion—to distil surplus wine into pure alcohol on a compulsory and, probably, more regular basis.

produced on this basis could cause permanent disruption if it were sold into the synthetic alcohol market at subsidised prices, as the EEC is pro-posing. Ministers have pledged support for the com-pany's fight to prevent its synthetic alcohol business being jeopardised.

ally similar to pure alcobol distilled from wine—is made from petrocliemical raw materials and used in the manufacture of tolletries, cosmetics, industrial solvents

and other products.

The current price of synthetic alcohol is about £500 a tonne. But Mr David Cronch, MP for Canterbury, said in a recent House, of Commons debate on agriculture that the subsidised cost of distilling surplus EEC wine for the syn-

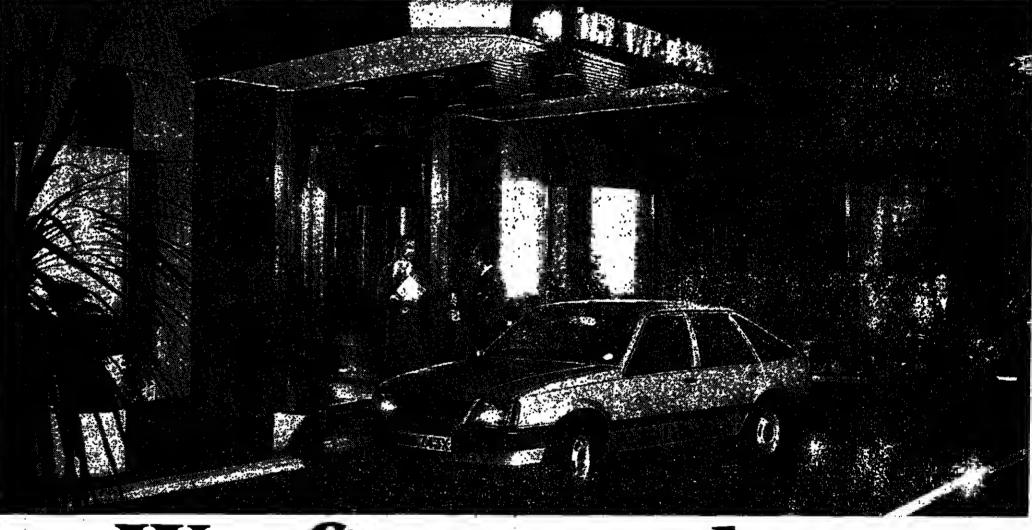
thetic alcohol market would be "nearly £2,000 a tonne." The safegaurds in the latest agreement on exceptional distillation of wine are: • Member States must tell

the European Commission when they plan to sell dis-tilled wine alcohol, and give details of price and volume. The Commission will inform other member states and decide whether the proposed sale will disturb the synthetic alcohol market

• If disruption seems likely, the commission can either halt the sale or demand changes in planned price or

Prices have been set at 81.5 per cent of the EEC guide price under the exceptional distillation agreement. The present market price for wine the guide price.

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BP has warned the UK Government that pure alcohol Labour has modest hopes for local election success

London boroughs, making a and 103 of the 298 English non-total of 16 out of the 32, one metropolitan councils.

The metropolitan district (Dudley) and seven non-metropolitan districts. Only the metropolitan districts. Only the metropolitan districts. Only 10 have full council elections, the rest elect the council in

The party in London achieved a remarkably low swing-back of only 6 per cent in last year's council standing for election.

Greater London Council elections to gain control of Greater London Conneil election Labour bopes to gain commol of tion and if this is repeated next Cambridge, Milton Keynes, month its only London gains Basidon, Blackburn, Crewe and Fulham, and Wandsworth. Great Yarmouth. Labour is hoping to hold its 13 London boroughs, although Lambeth could go to any party on the basis of its by-election

most marginal Labour's conneils are Brent, Campen and Hounslow. Conservatives could A strong showing by the Hounslow. Conservatives could have particularly if it takes Beviev, Enfield and Merton and more support from Labour than more support from Labour than conservative, could make even modest targets in England conneils are Brent, Camden and

THE LABOUR Party hopes to all 36 metropolitan districts gain control of three more nine Scottish Regional Councils.

elections,

A frank analysis of the party's likely fortunes indicates that the Liberal-Social Democrats alliance is "throwing a spanner in the works" and that the Labour Party has largely failed to capitalise on Government unpopularity.

The party is London tablesed

Labour controls four of the nine Scottish Regional Councils and admits it will be doing well to retain them and keep its present 175 regional councillors out of a total 432.

could well lose Richmond and Conservative could make even Sutton to the Alliance. these modest targets in England In addition to the 32 London and Scotland unattainable for horoughs, elections take place in Labour.

employers the right to sack a striker under other as a result of the strike certain conditions. Philip Bassett looks at the difficulties, an employer could

implications.

of a provision of the Employ-ment Bill, 1982, which they feel will give employers a resdymade weapon to divide and rule. concerned before the end of the At present, employers cannot specified period; and
then dismissed all employees discriminate by sacking some of their workers on strike, while still taking part in the strike. allowing others to return to Employees can claim While not affecting employers' existing right to dismiss strikers unfair dismissal if they show without notice, this clause that other strikers have not

clearly provides them with dismissed or one nr more weapons that some have been have been offered re-engageseeking—the ability to pick out However, this protection—given by Section 62 of the and deal with industrial troublemakers and the "work-or-else" Employment Protection (Con-Trade union officials believe solidation) Act 1978 passed by the last Labour Government, does not allow a hearing on complaints of unfair dismissal by

that this provision was inspired by the tough tactics of Sir Michael Edwardes, BL chairworkers who take strike or other They feel that faced with the of industrial action

combined might of trade union strength, few employers would have the nerve to copy Sir Michael's sacking of Mr Derek Robinson, the militarit Longbridge convener, or to force strikers back to work with the threat of closures and dis-

employee on strike that any of The TUC sees this provision them not returning to work in of the Bill as an invitation to The TUC sees this provision get rid of shop stewards and four working days may be other activists more likely to resist management warnings

the return to work notice under Clause 7. In practice, an employer probably would be unlikely 'to divide militant members from Some umons have selzed on one point in the clause which perhaps is not as restrictive as it might be. Clause 7 refers the rest unless he sensed that specifically only to a strike and strikers would prefer to return nnions therefore believe that to work. In theory, an employer industrial action short of a could repeatedly issue warning strike will continue to enjoy

CLAUSE 7 of the Employment Bill gives exploit the disadvantage usually substained by one side or the

to leave activists at the core. For unions paying strike pay -particularly whate collar unions—the clause could have considerable financial implications. They could be committed to paying those dismissed who bad oo likelihood of a claim for unfair dismissal. In a largescale strike, the bill for the union could be prohibitive. To prevent a successful use of divide and rule, unions would have to impress upon their

notices until the number on

strike had been whittled down

work in response to a Lorice issued under Clause 7, they would risk the dismissal of their colleagues still fighting on. The clause could also have implications for agreements on returning to work after a strike. These agreements are often difficult to conclude since they

without pay when strikes else-where in the economy restrict their production. members that if they return to The clause does provide, however, an important tool for employers to roll back further the boundaries of trade union

Tomorrow: trade union immunities and the narrowing of the definition of "lawful industrial action.

If there were negotiation

force the issue by the use of

the immunities granted by the

The provisions of Clause 7

clearly do not go as far as the

action against selective strikes called for by the Engineering

Employers Federation. Its pro-

posals are the subject of an

amendment to the Bill sup-ported by a group of Conserva-tive backbenchers. The EEF

wants companies to be given

the right to lay off workers

1978 Act.

Advice to directors

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unless the entire striking work-

this provision, breaking the employers' all-or-nothing" res-

triction. Workers will not be

able to claim unfair dismissal

a specified period of at least

given notice to every

where the employer has:

Chause 7 of the Bill amends

force was dismissed.

of trade unionists well before

Poland. So hardly surpris-

ingly Britain's unions are wary

THE INSTITUTE of Directors is sending its members advice on how to combat the TUC's campaign against Mr Norman Tebbit'a Employ-ment Blil.

In response to the TUC strategy (adopted at a special conference on April 5) of warning employers of "the risks of widespread disruption if they use the proposed legislation," a briefing paper will go to all IOD members . Director the

It points out that the TUC policy of calling industrywide strikes in support of a union taken to court would probably be unlawful under the 1980 Employment Act-on the grounds that they had a political objective.

The briefing also aims to provide the 41,000 business people who will receive it with responses to the main

criticisms of the Bill, "which can be used in communications with the work-force wherever local opposition appears."

It says: "Legal reform in industrial relations bas sub-atautial and wide-ranging support, both in the popula-tion as a whole and among trade unionists." and it points to the November 1981 MORI opinion poll on trade union law which showed majority support among trade unionists for legislation. The briefing also states that the Bill, now at its committee stage in the Commons, would not remove any of trade unions' basic rights."

.In response to the likely trade union boycott of closed shop ballots, the briefing aays: "Either a review ballot will bave to be held without union co-operation or the closed shop agreement will have to be terminated."

Power engineers warn on plutonium exports to U.S. BY BRIAN GROOM, LABOUR STAFF

POWER engineers and mana-advance the U.S. nuclear arms

gers in Britain are threatening programme to reconsider support for future development of nuclear power, if civil plumnium is exported to fast-reactor development pro-the U.S. without satisfactory gramme because the Carter safeguards its use in an arms.

Mr John Lyons, general secretary of the 34,000-strong Electrical Power Engineers Association (EPEA), is likely to approach the Government and the Central Electricity Generating Board soon to make the union's view clear, Withdrawal of co-operation

by the EPEA could have serious consequences. It represents more than 95 per cent of technical, scientific, professional and management staff in the electricity supply indutery. Deep concern about the plu-

The U.S. faces a possible shortage of plutonium for its gramme because the Carter Administration halted the reprocessing of spent fuel. It has approached the British Government about exports from the UK and Whitehall has approved

The Government has said any exports would be made only after assurances that the materials would remain subject to international safeguards under the U.S. treaty with the International Atomic Energy Agency.

in principle.

This does not satisfy the EPEA. It fears that the use of UK civil plutonium in U.S. fast reactors would release U.S. tonium issue emerged at the plutonium for use in weapons, union's annual conference last week. It expressed anxiety that UK civil plutonium could be Energy Agency do not prevent "directly or indirectly" to such a consequence

Managers' unions bid for national EEF recognition

BY OUR LABOUR STAFF

TWO MODERATE managers' nnions seem set to fail in their to reject the approach, preferjoint bid to win national recognition for collective bargaining from the Engineering Employers' Federation.

The Electrical and Engineering Steff Association (Eesa)—the staff section of Mr Frank Chapple's electricians' unionand the Engineers' and Managers Association are likely to make their approach at the end of this month.

Collective bargaining forms a central part of the sgreement between the two moderate TUC unions and they believe it would assist them to wio recognition in individual engineering companies. They wish to work together to expand their joint membership of 15,000 professional and managerial staffs in engineering and

shipbuilding.
The Engineering Employers'

Federation is virtually certain ring to leave it to individual member companies to decide whether or not to recognise the two unions.

EEF leaders feel nationa recognition would serve little purpose, as at would not involve national negotiations and the two unions do not have large enough memberships in engineering to warrant it.
The move would also be

opposed by some of the five white-collar unions in the Confederation of Shipbuilding and Engineering Unioos, which the EEF already recognises—particularly AUEW-Tass and the Association of Scientific, Technical and Managerial Staffs

These two unions are already engaged in a battle with the EMA and Eesa to win manageried and professional

ICL increases weighting

MAJOR increases in the London allowance have been won by 2,500 members of the Association of Scientific, Technical and Managerial Staff (ASTMS) employed by International Computers (ICL).

and for 720 in outer London increase.

from £230 to £446. The rise came into effect on April 1.

Mr Tim Webb the ASTMS national officer who negotiated the deal, said: "This is a major breakthrough given the recent uters (ICL). financial problems of ICL and The allowance for 1,810 staff the pay foreze of 1981." He in the inner London area has added that negotiations were increased from £544 to £1,003, going ahead for the 1982 pay

THE TUC steel committee has condemned as a "give-away" the planned sale of British Steel Corporation's Redpath Dorman Long heavy engineering sub-sidiary to Trafalgar House for

represented nn the committee. One which is not the Steel tion, bas proposed an employee buy-out of the company.

The TUC committee said collective bargaining issues were

Plessey faces 'loyalty' row

to work while colleagues staged a sit-in over closure, say they are not going to be paid for their loyalty to the company. plant in West Lothian last month, with the loss of 250

They co-operated with local management and made them-

The workforce occupied the plant for eight weeks, but 88 men and women offered to help the company run down the plant in an orderly manner.

The workers, belped by Mr Michael Bell, an Edinburgh solicitor, bave written to Sir John Clark, Plessey's chairman and chief executive, asking him to intervene.

their case to an industrial tribunal or to the Court of Sessions if their appeal to Sir John

FT COMMERCIAL LAW REPORTS

Digest of cases reported in Hilary term

FROM JANUARY 4 TO FEBRUARY 3, 1982

Perdama Properties Bad v United lords in very wide terms, calling Office. However, telephonic was not covered by the standard Orient Leasing Co. Sdn Bhd (FT, for disclosure of all documents acceptance is complete when the exemption clause. January 4).

January 4). business. The tenants appealed, When a supermarket in Jahore west into liquidation, its equipnot only against the scope of the order but against it having have been given at all. The best eviment concerned two parties: the landlords, who wished to distrain dence of open market rent, the for unpaid rent, and the lessors Appeal Court held, was what of the equipment. The latter wrote to the supermarket traders in the area were prepared to pay for appropriate premises. directors that they were "assum-ing immediate possession of our equipment under the lease Profitability was to be considered only in very particular cases, but these cases could not be extended into a general rule. The Morkiven (FT, January 19)
It is public policy, the Appeal Court stated, that all goods carried by sea ought to be subject to the same rules agreements." In dismissing the landlords' appeal, the Privy Council held that they could bave succeeded only if the goods had

remained in the tenants' posses-sion with the lessors' "consent and permission." As their letter formed a sufficiently effective withdrawal of consent, a formal determination of the lease was Pancommerce SA v Veecheema BV (FT. Japuary 8). The Spanish government un-expectedly refused applications

for export licences for foodstuffs in 1976, and the defeodant sellers claimed protection of the Gafta form 100 which cancels the contract of sale in cases of prohibition of export through government intervention. Their contention was dismissed, however, as they had a hinding contract of sale for sugar beet with the plaintiffs, for which they had received a licence, and this overrode any other, informal agreement that they had entered into for the sale of similar foodstuffs. Mutual Life Insurance Company of New York and others v Rank Organisation Ltd. and others (FT

The contention that share-holders of the same class cught to be given equal treatment was dismissed in the Chancery Court. No overriding term in the membership contract entitled all abareholders to identity of treatment provided the directors acted fairly and in good faith in the company's interests. In this case, the American shareholders were treated fairly although disqualified from purchasing newly-offered shares to existing shareholders because of federal government restrictions. Tropwood AG of Zug v Jade Enterprises Ltd (FT, January

In restoring an arbitral award, the Appeal Court beld that a clause in a charterparty which appeared quite meaningless ought not to be rejected. Rather it ought to be given the meaning the parties intended, and this could be ascertained by looking at somewhat similar clauses in the shipping trade. Words could be supplied, or implied, and the punctuation altered before resorting to outright rejection. Another phrase, moreover, as to whether the vessel was "on the voyage to the port of redelivery" was an arbitral finding of fact, not of law, with which the Court ought not to interfere. .

W. J. Barton Ltd v Long Acre Securities Ltd (FT, January 15). On application to a county court judge for a new lease under the Landlard and Tenant under the Landlord and Tenant rule holds that a contract is out of the Dip in the Westley Act, an order for specific complete when a written accepdiscovery was given to the land-aance is handed to the Post Now back in top trim and

received. This rule, they warned, could not be regarded as covering all possible cases.

governing the parties' rights and habitities. To this end, the 1971 Carriage of Goods by See Act incorporated the Hague-Visby Rules, making them paramount in any bill of lading. Their provisions were to apply what-ever might be the proper law of the contract, in the interests of all concerned in a shipping transaction. The action in the present case should proceed in an English court, where clause 2 of the Bill of Lading, limiting liability under the old Hagus Rules, was null and void. Earl of Lonsdale v HM Attorney

General (FT; January 20)
The Earl of Lonsdale's claim that he owned oil and natural gas under the seabed off the Cumbrian coast was dismissed in the Chancery Court. In 1880, the Crown had conveyed to the Lonsdale family its interest io coastline. The Court, in constru-ing this conveyance, had to place itself to the position of the parties at that time. The context of 1880 made it plain that the marase "mines and minerals" applied only to solid substances capable of being dug out of the graind. Furthermore, a graot involving the Crown had to be construed in a way most favour sble to the grantor.

Pilkington Brothers Ltd v In-land Revence Commissioners

(FT, January 22)
Another tax avoidance scheme came up for consideration before the Law Lords who, by a majority, again overruled the Chancery Court. They held that "arrangements" entitling a company to group relief under the Finance Acts, ought not to be narrowly construed. A restrictive interpretation, they felt, cut down the plain meaning of the statute. Thus Pilkington's scheme to purchase a shio from Manchester Liners and to offset the expense against tax able income was disallowed. "arrangements," involving the reconstituting of three other companies, failed to comply with broad interpretation of the

Brinkibon Ltd. v Stahag Stahi und Stahiwarenhandelagesell-schaft MmbH (FT, January 29). compounding the problem of when and where a contract is concluded. The 19th century

message is received. When the question of telex communications w Oceanus Mutual Underwritinarose, the telephone rule was held to apply to them, too. Thus the Law Lords refused leave to serve a writ out of the jurisdiction on the grounds that a contract was concluded in Vienna where the telex acceptance was

Cleveland Bridge and Engineering Co Ltd (FT, January 27) When British Steel entered into negotiations for a contract to manufacture steel nodes, work was commenced at the defendants' request, "pending" s formal contract. The defendants wrote a "letter of intent" so as to expedite delivery. The contract never materialised and its likely terms were never ascertained. Mr Justice Goff beld that the defendants' contention that they could counter-claim for late delivery could thus not be sustained, while BSC was entitled to a reasonable sum for the completed work.
Tor Lines AB v Alltrans Group
of Canada Ltd. (FT, January 29).

Mr Justice Bingham said that be took the unusual step of combining an application for leave in appeal against an arbitral award into a full appeal in order to obviate the expense of a further hearing. The argument concerned a standard clause in a charterparty exempt-ing the owners from liability. In another clause the charterers had specified their requirements for a vessel intended to load con-tainers. The owners failed to supply a vessel of these dimen-Upon consideration, the judge was nersuaded that the umpire's finding was correct that

Association (Bermuda) Ltd (FT

February 3) Because the law of England was so favourable to under-writers, and could work such hardship on the insured person, Mr Justice Lloyd held that the general rule on non-disclosure of a material fact was that the Court had to be satisfied that a prudent insurer — If he had altogether or charged a higher premium Merely to assert that, with the additional information the underwriter's approach might have differed provided insufficient evidence to support an allegation of non-disclosure. Kamouh v British Aircraft Corporation (Operating) Ltd (FT,

February 3)
Mr Kamouh's brother disappeared on November 14, 1973 speared of November 1 1873 and in circumstances pointing strongly to his death on that day or shortly thereafter. The plaintiff sought leave to after his capacity from judicial administrator (an appointment of the property he received in Beirut) to that of administrator of his brother's estate. Alternatively, he sought to pursue proceedings under an English grant of letters of administration. Both applica-tions were refused. His brother could not have been a party to the action when, in 1975, Mr Kamoub issued his original writ so that the presumption of con-tinuance of life was of no assistsuce. Nor could the plaintiff change his capacity once the writ was issued and the limita-tion period expired, Mr Justice Parker held.

A digest of cases reported between February 5 and March 5 will appear

By Aviva Golden

RACING

bresch of these undertakings

BY DOMINIC WIGAN

SIMPLY GREAT now stands shorter in the 2,000 Guineas betting than any of Guy Harwood's possible runners, and he is certain to start a hot Pulborough's Norwick and seven others in the Craven Stakes at Newmarket today. On "the book." Simply Great, whose formidable reputation took a battering when he trailed home seven to nine behind Wind and Wuthering in the William Hill Dewhurst at Newmarket has no chance

today—let alone in a classic field. However, before that effort, Simply Great had shown immense promise, not only on the gallops but when smother-ing his rivals for speed coming

reproducing the sye-catching homework which led to his being backed for a Guineas Derby double before his racecourse debut, the Warren Place colt should lift the Ladorokes prize today without too much difficulty. But, with his elds for the 2,000 Guineas arready hardened to 8-1, would be classic supporters should wait and see how he comes out of this much less exacting test. On the 1,000 Guineas front the consensus now seems to be firmly behind the possibility that Simply Great's pilot. Lester Piggott, will be on the French filly. Play It Safe, rather than Sing Softly, on April 29.

NEWMARKET

2.00-Victory-House 2.30-Military Band***

3.00—Airspin 3.30—Simply Great 4.05—Labab 4.35-Jacquinta** CHEPSTOW

2.00-Born to Reason 3.30—Lesley Ann 4.00—Forbidden Fruit*

TELEVISION

Three fresh, if not strictly new series tonight: Young Musician of the Year and Play for Tomorrow on BBC 1 and Sorry I'm A

Stranger Here Myself on ITV which is developing an unusually

powerful Tuesday night. With repeats of The Morecambe and

Wise Show followed by their serial The Brack Report about a

rebellious (and of course brilliant) nuclear scientist, and then, after News at 10, Desmond Morris's series on The Human Race

which tonight is devoted to modern substitutes for the ritual of

the hunt, they have s strong mixed middle-brow schedule.

The sitcom Sorry Pm a Stranger Here Myself stars the

inimitable Robin Bailey who in the first series left his wife in

Datchet and returned to Stackley to discover a green-haired

punk squatting in his house. In the new series he returns to

Sybil whose life is governed entirely by television programmes.

The third series of Young Musician of the Year involves 44

competitors in the semi-final rounds. In tonight's opening pro-gramme the previous winoers Michael Hext and Nicholas Daniel

talk shout their experiences and Lady Evelyn Barbirolli discusses

the contest from the judges' point of view. Play For Tomorrow is a series of six dramas offering different views of the near future. Tonight "Crimes" by Caryl Churchill forsees over-

crowded prisons (that takes prescience?) and opens with a group

BBC 2

BBC 1 † Indicates programme in black and white Chris Dunkley: Tonight's Choice

9.55 am The Wombles. Jeckanory with Bernard Crib-bins. 10:15 Lassie: 10:35-11:00 Why Don't You . .? 12:20 mm News After Noon. 1:00 Pebble Mill At One. 1.45 The Flumps. 12.00 "The Goose Steps Out" film starring Will Hay. 3.15 Songs of Praise from Wells Cathedral. 3.53 Regional News for England (except London). 3.55 Play School. 420 The All New Popeye Show. 440 The Record Breakers with Roy Castle and Norris McWhirter. 5.05 Newsround with Paul McDowell 5.10 Break in the Sun. 5.35 The

5.40 News 6.00 Regional News Magazines.

6.25 Nationwide, including
"The Bomb Disposal
Men "report.
6.55 Barney Bear (cartoon). 7.05 Young Musician of the

Year.
7.40 QED. "Light Crestures of the Night" 8.10 Flesh and Blood starring Thora Hird, Bill Fraser, Nigel Stock and John

9.00 News. 9.25 Play Play for Tomorrow "Crimes" by Caryl Churchill, starring Julia

Foster and T. P. McKenna. 10.25 Snowdon on Camera: 11.03 News Headlines. 11.05 Harry O All IBA Regions as Loodon except at the following times:

ANGLIA

S.30 am Searme Street. 10.30 Friends of My Friends. 10.55 Joe 90. 11.25 Aftered-Images in Concert. 11.50 Wattoe Wattoo. 12.30 pm Gardening Time. 1.20 Anglio News. 3.45 Loeks Femiller. 5.16 Old Trant Stroker. 6.00 About Anglio. 11.30 Quincy. 12.25 am The Bible for Today.

CENTRAL

CENTRAL

9.35 m 3-2-1 Context. 10.05 ProCelebrity Angling. 10.30 Falcen Island.
10.55 Portreite of Power 10e Gzuke).
11.20 Far Club and Country. 12.30 pm
The Young Doctors. 1.20 Central News.
3.45 Loeke Famiher. 5.15 Radia. 5.00
Crozerosds. 8.25 Central News. 11.30
Central News. 11.35 Pre-Celebrity
Angling. 12.05 em Tuesday Jazz end
Blues: John Lee Hooker.

GRANADA

3.30 am European Folk Teles. 3.40 Joe 90. 10.05 Survival. 10.30 Anne and

(S) Stereophenic broadcast (when broadcast en VHF)

RADIO 1

11.00-11.25 am Play School 13.40 pm Easter Matinee: "The Girl of the Golden West" 5.35 Hawk of the Wilderness. 5.55 The Waltnns. 6.40 One Hundred Great Paintthe King. 10.55 The Subblies. 11.00 Seems Street. 1.20 pm Graneds Reperts. 1.30 Exchange Flegs. 1.55 Crown Ceuit. 3.45 Looks Femilier. 5.15 Happy Osys. 5.00 This is Your Right. 8.05 Croserosde. 6.30 Graneds Reports. 11.30 Barney Miller. 12.80 Late Night Item Two.

starriog Jeanette Mac-Donald and Nelsoo Eddy.

HTV

9.45 am Joe 90. 70.10 Survival.
10.35 The Finistones. 11.00 Sesame
Street. 12.39 pm Peint Aleng with
Nancy. 1.20 HTV News. 3.45 Looks
Femilier. 5.15 Offi rent Strokes. 8.00
HTV Naws. 5.35 Crosarpads. 10.28
HTV News. 11.30 Perfrant et a Legund
(Stavie Wender).

SCOTTISH

6.55 Broadway Musicals: "A Furny Thing Happened on the way to the Forum." 8.30 Top Gear. 9.00 Pot Black 82, 9.40 Fields of Play. 10.45-11.35 Newsnight-

Problem? 11.30 Late Call. 11.35 Nero

TSW

6.50 News Summray.

LONDON

9.30 am World Famous Fairy Tales, 9.45 Wild, Wild World of Animals, 10.10 Animated Classics. 10.55 The First Day, 11.25 Paint Aloog with Nancy. 11.55 The Bubblies. 12.00 Button Mood. 12.10 pm Let's Pretend. 12.30 The Sullivans. 1.00 News, plus FT Index. 1.20 Thames News with Robin Houston. 1.30 Crown Court. 2.00 For Christ's Sake presented by Anna Ford. 2.25 Racing from Newmarket covering the 2.30, 3.00 and 3.30 races. 345 Home Sweet Home. 415 Rosd Runoer. 4.20 On Safari. 4.45 CB TV-Channel 14. 5.15 The Brady Bunch. 5.45 News.

6.00 Thames Thames News with Andrew Gardner and Rita 6.35 Crossroads.

7.00 Horace. 7.30 Give Us a Clue: Michael Aspel and team captains Una Stubbs and Liocel Blair are joined by Liz Fraser: Deniss Nolan. Richard-O'Sullivan, Lance Percival, Wayne and Victoria Wood.

8.00 Sorry I'm a Stranger Here Myself. 8.30 The Morecambe and Wise 9.00 The Brack Report. 10.00 News

10.30 The Human Race.

11.30 Kaz. 12.25 am Close: Sit Up and Listen with Tim Rice.

Rest News. 9.30 Batley's Strd. 9.65 Recieg Rivers. 10.15 Merring Morie. Tarzen Gees to India." 11:50 Saky and Jeks. 1.20 pm North East News and Loskeround. 2.45 The Rierdans. 5.15 Surviver. S.00 Nerth East News. 5.02 Crestroeds. 6:25 Nerthern Lis. 10.30 Nerth East News. 11.30 The Two of Us. 12.00 The New Life.

9.30 am Larry the Lamb in Teytawn.
9.40 Sesame Straet. 10.40 The Reyel Henley Boeting Regetts. 11.25 Paint Aleng with Nency. 11.55 The Undersee Adventures of Captain Nemo. 12.30 pm Sygenes. 1.20 TSW News Headilnes. 9.45 Welcome Seck Kotter. 5.15 Gue Heneybun's Megic Birthdeys. 5.20 Croseroste. 6.00 Teday South West. 6.30 Locks Femiller. 10.32 TSW Cats News. 11.30 Nero Wolfe. 12.25 am Pesteriat. 12.30 South West Weather. 10.25 sm "The lien, The Wilch and the Wardrobe." 1.20 pm Lunchtmes. 1.22 Cartoen Timu. 3.45 Looke Familiat. 4.13 Utsler News. 6.15 Rede. 5.30 Hear Here. 5.00 Utster News. 6.05 Heppy Oaya. 10.29 Utster Weather. 11.30 News et Sedtme.

TVS 8.35 am Survivel. 10,00 Sailay's Bird. 10,30 Eurapéan Foik Telkes. 10,45 Sity Smart'u Easter Cricus. 1.20 pm TVS News. 3.45 Looke Familier. 5.15 Redie. 5.30 Coest to Ceset 6.00 Coest to Coest (continued). 11.30 Sress in Concert, 12.15 sm Company.

TYNE TEES 9.20 am The Good Word, 8.25 North

YORKSHIRE

9.20 um Lurry the Lemb. 9.40 Secoms Street. 10.40 Patterns. 11.05 Wilder-ness Aliva. 13.55 Thu Underses Adven-tures of Captain Nemo. 12.30 pm Loaks Familier. 1.20 Calender Nows. 3.45 Calunder Tuesdey, 5.35 Mr Merlin. 8.00 Celender (Emley Moor end Balteont adtrions). 11.30 Bamoy Miller.

Take the first step now. Send to: Mr. Charles McCartan, Marketing Manager, FREEPOST Address ino stamp required; Trade indemnity bic. Trade Indemnity House, 12-34 Great Eastern Street, London EC2B2FI Telephone 01-7594511.

Steel unions attack sale

Most of RDL's nine unions are

involved as well as those concerning the sale of public assets "We understand that the powerful and wealthy Trafalgar House conglomerate are even contemplating depriving RDL manual workers of their bardearned pensions scheme. Under Industry Management Associa- BSC, they enjoy the same pensions as white-collar staff. That will end."

PLESSEY workers who offered selves available for work. Plessey closed its Bathgate

Now they learn they are not to be paid for that period - a total amount estimated at £80,000.

They are prepared to take

5.00 em As Radio 2, 7.00 Mike Read. 2.00 Simon Bates. 11.30 Osus Les Travia. 2.00 pm Steve Wright. 4.30 Peter Powell. 7.00 Telkabout. 5.00 David Jensen. 10.00-12.00 John Peel (S). RADIO 2 5.00 am Nick Page (S), 7.30 Ray Moere (S). 10.00 Jimmy Young (2), 12.00 Glora Hunniford (S), 2.00 Ed Stawart (S), 4.00 Devid Hamilton (S), 5.45 News; Seort, 6.00 John Dunn (S), 8.00 The Golden Age of Hothywood (S), 9.00 Listen to the Bend (S), 8.30 The Organist Exercise (S), 8.55 Sports Desk, 10.00 The Achur Askuy Shew, 11.00 Brian Materials with Bound Mid-

9.30 am Our Incredible Werld. 9.50 Tuesday Metines: 2ig 2ob Jahnson and His Spead Circus. 11.25 Hew the Hedgehog Grew Larger. 11.50 Wettoe Wattoo. 12.30 pm Gerdening Time. 1.20 Scottish News. 2.46 Locks Familier. 5.10 Treveller's Tates. 5.20 Crosscoads. 5.00 Scotlend Taday followed by Jeb Spot. 5.30 What's Year **RADIO**

night. 1.00 alg Band Special with The Radie Big Band (S). 2.00-6.00 Yeu and the Night and the Music (S). RADIO 3

FADIO 3

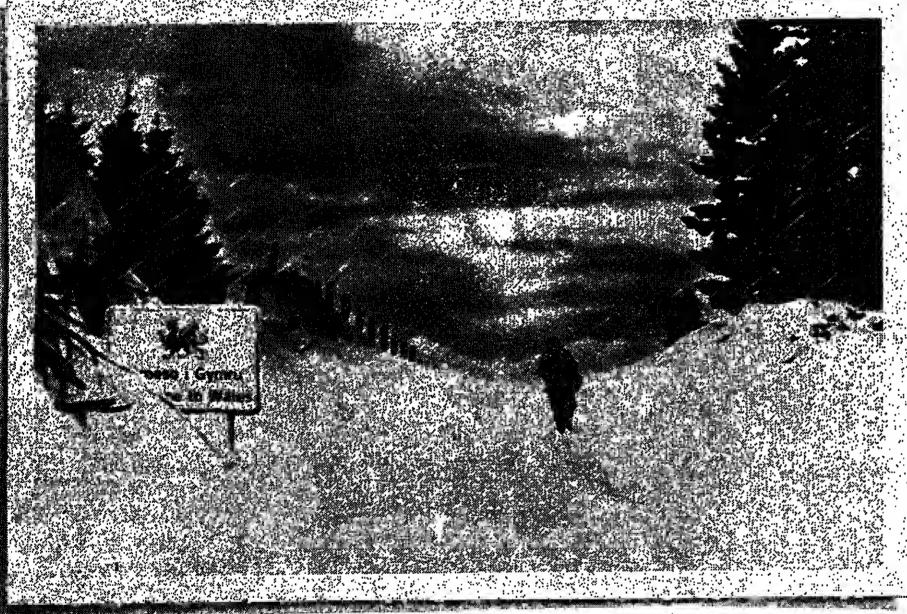
5.55 am Washer, 7.00 News. 7.05
Merning Concert (8), 8.00 News. 2.05
Merning Concert (continued): 9.00
News. 8.05 This Wesk's Composer:
Mezart (5), 10.00 Baffet Music (8),
11.05 Atbarni String Quertet (8),
12.05 pm aBC Welsh Sympheny
Orchestra, part 7 (8), 1.00 News.
1.05 Six Consinents, 1.25 BBC Welsh
Sympheny Orchestre, part 2 (5), 2.00
asch chember mysic recital (5), 2.50
arrish Moste (5), 2.55 Kebelevsky
cello and piane recital (5), 4.25 Jazz
Teday (5), 4.55 News. 5.00 Mainly
(or Piessure (5), 7.00 Teke it Prezarinil
A profile of Lester Yeung, whose pfey-

ino serned him the nickneme, President' el the tenor askephene. 7.55
Wards. 8.00 Asturo Benedetti Michalangeli pisne recitel from the Rayel
Festivel Hell Loadon, part 1: Bestaven
(5). 8.50 The Teke-Away Guerriks...
9.10 Arturo Benedetti Michalangeli recitel, part 2: Oebussy (5). 10.00 Over
the Bridge. 10.40 Telemann (5). 11.00
News. 11.05-11.15 Eneco (5). RADIO 4

ACO am News Briefing, 6.10 Ferming Week, 9.25 Shipping Fercest, 9.30 Today, 8.43 The Richard Stigos Latters (S), 8.57 Westher: travel, 8.00 News, 9.05 Tuasday Call (Astronomy), 10.00 News, 10.02 From Qur Own Correspondent, 10.30 Daily Service, 20.45 Merning Story, 11.00 News, 11.03 Thirty-Minute Theatre, 11.33 Wildfile.

12.00 News. 12.02 pm Yau and Yours.
12.27 Latective. 12.55 Weather, gravel. programme news. 1.00 The World at One. 1.40 The Archers. 1.55 Shipping Forecast. 2.00 News. 2.02 Women's Hour. 3.00 News. 3.02 Ann Veronica by 41.00 News. 3.02 Ann Veronica by 41.00 The Vicer's Wife. 4.40 Story Time. 5.00 PMI. News magazine. 5.05 Shipping Forecast. 5.55 Weather. programme news. 6.00 News., mcluding Financial Report. 5.30 2 rain of Britain 1802 ** 7.00 News. 7.95 The Archers. 20 Medicine News. 7.95 The Archers. 20 Medicine News. 7.95 Animal Language (5). 3.20 Great Gattaping Gottachait. Glimpass at his whistwind his of the composer Louis Marsett Gattaping Househald (1823-1869). 9.55 Neather. 9.30 Keletdiscope. 9.55 Weather. 10.00 The World Tenight. 10.30 And So Te Ned. **11.00 A Sock at Bedsme. 11.15 The Fidencial World Tonight. 11.30 Chember. 3.22 (5).

Colt kept us open when Wales closed?



The climate was hardly encouraging for industry in Wales last winter.

an indi

With Arctic temperatures and snowdrifts as high as houses, many factories were simply forced to close.

Yet Rubery Owen Rockwell Ltd., of Llay near Wrexham, kept up their production of heavy-duty trailer axles as if nothing had happened.

In fact, a great deal had changed since the previous summer. Colt had been to the Llay works and installed a warm-air heating system of modest capacity, but combined with some very clever energy-saving devices.

Computerised optimisers were used to make sure the factory was warm enough by clockingon time. On bitterly cold days, they automatically start up the heating in the early hours.

But they also delay it at the first sign of a mild spell. And switch it off before the factory closes, so converting thermal lag into cash in the bank.

A system of Wastemaster Mk. II fans was also fitted, to counteract heat loss through the roof. These fans create a cushion of air which holds the heat down at working level, where it belongs.

The results? In the first half of last winter alone, Rubery Owen Rockwell spent £10,000 less on fuel-a 41% saving on the previous year.

But last winter was no ordinary winter: allowing for the record low temperatures, and the company's longer working hours, Rubery Owen Rockwell estimate their savings at 67% in real terms.

And as the cold was closing down other factories, they also saved several working days, which would otherwise have

cost them £70,000 in overheads.

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We'll give you a guaranteed figure for what you will save – at least 25% on average. And you'll also know just how long your investment will take to pay for itself-usually about 2 years. Naturally, the savings will still keep coming in year after year.

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sible to put into figures.

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couldn't bring you.

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EDITED BY CHRISTOPHER LORENZ

Pooling resources to help large and small

James Buxton examines how an Italian entrepreneur has set up an American-style joint venture with Olivetti

pool forms on the 13 big games which are played on Sunday afternoon. Instead of sending them in by post they take them to their local tobacconist or bar, of which about 14,000 function as agents all over the country. The agents then send the forms to the Rome headquarters of the Totocalcio pools organisation. where, after immense labours by an army of sorters. the winners are announced on the following Wednesday.

It is a system crying out to he automated but how do you automate simple back street tobaccooists and bar-keepers? The answer has been devised by Massimo Rinaldi, a 53-year-

old inventor and businessman who runs his own company, Mael Computer, He has designed a small, very simple but robust machine which anyone can operate. The punter or the tobacconist inserts the pools entry, the machine scans the marks on it, which must have been made in blue or black ink, records the details in a bar code on a tape and gives the punter a receipt.

The agent then forwards the tape to a regional centre, which sends it to Rome where a computer decides the winners. "By

crowds are leaving the stadium." savs Rinaldi.

Rinaldi is hardly one'a idea of a typical Italian electronics designer. He is a rather thick-set Roman, swallows part of his sentences and describes his inventions in so matter-of-fact a way that one gets the impression that almost anyone could have invented them. Like many successful Italians whose names have got into the newspapersoften via the pernicious medium of lists of people who have or have not paid their taxes — be bas a revolver per-manently in his waistband as a guard against kidnapping. "And I know bow to use it," he says.

Stretched

The contract for up to 14,000 machines for Totocalcio, was agreed last month and will be worth Lö0bn over two years. It could bring in a total of L100bn over the next nine years, counting service contracts. But it has affected the future of

Its 1981 turnover was L16bn (£6.8m), and it has other important contracts in the pipe-Its financial resources

EVERY WEEK between 10m largely installed, the winners of indigenous computer mannand 20m Italians fill in football should be announced while the facturers that it claims to be pool forms on the 13 big games crowds are leaving the stadium." apart from Olivetti to have its own design capacity — that is Rinaldi, himself an electronics engineer, and about two dozen assistants. Yet it employs only 190 people, Its little factory is at Carsoli.

on a bleak plateau in the Abruzzi mountains about 45 minutes up the motorway from Rome. That puts it within the assisted area of the Mezzogiorno (the South) but its ten-year tax holiday has now run out and Rinaldi plays down the other incentives for being there. But since it is the only computer manufacturer based in the Maei benefits from a law that obliges the state sector to place 30 per cent of its orders with southern-based companies. The company claims consis-tently to bave made profits

to quadruple its labour force develop on its own, but that in and needing to increase its due course it should get a good Ll.5bn capital, Mael bad to look for more financial backing. Having ruled out bank borrow-vests have growth rates of 30 to the back birth interest and the laborate states. the high interest rates (prime rate of 21.75 per cent) its latest investments is a 20 would have finished us off in a per cent stake in a U.S. office looked like being stretched. would have finished us off in a per cent stake in a U.S. office three years. Who knows what Such is the relative paucity twinkling of an eye," says automation company set up in will be happening when the

(though it does not disclose



Massimo Rinaldi: ruled out bank borrowing because "the high interes in the twinkling of an eye"

Olivetti already had a policy of investing venture capital in-to small, technologically

advanced and expanding com-panies. In the past three years it has made nearly 20 such investments, most of them in the U.S., a fact which has caused it aome embarrassment in Italy. The advantage of the policy to Olivetti—as to the many

large companies which have set up similar joint ventures in the U.S.—is not only that it gains know-how that it might With the possibility of having take two or three years to vests have growth rates of 30 to 40 per cent a year. One of

Rinaldi - Mael bit upon 1978 by some former Exxon Under the agreement with Olivetti Mael's capital was in-

creased to L2.5bn and Rinaldi's partner, an influential business-man named Franco Pesci, sold out to Olivetti — giving it TO per cent of Mael's share capital. But Rinaldi will retain control of the company for three years through a 50.02 per cent bold-ing of voting shares, the rest being held by Olivetti. Olivetti is also making available a L5bn credit line.

After three years the big company will be able to convert its convoting shares into voting ones, thus gaining coo-trol. The prospect does not seem to bother Rinaldi much. "Frankly, in this business things move so fast that an electronic product is obsolete in

Olivetti will supply some parts for the Totocalcio machines as it would have done anyway, and some of the machines and ser vices may be made in Olivetti factories. Olivetti will belp to market Mael products in areas abroad where it is strong, such as Spain and Latin America-

but not in Italy.
Mael will be expected to provide know-how to Olivetti for certain projects that Olivetti is Interested in but the manage-ment and marketing of the two companies will remain separate and for a time they will com-pete in the business computer field, where Mael's leading computer model has greater capacity than any model made by

"Olivetti's strategy is to give us the freedom we need so that we don't lose our agility," says

Publishers panned for ignoring 'gap'

AN UNFLATTERING critique yiew and many adopt the of the current outpourings of attitude that " with persistence American publishers on the and common sense, entresubject of small business is prencurial skills are easy to given in the latest issue of learn."

Harvard Busioess Review. ln classic entrepreneurial fashion many publishers have beeded the call for more and better information by rushing into print with new books. magazines and feature articles devoted to starting and operating small businesses.

But the publications, including more than 50 books published over the past four years and three new magazines, are not filling the information and education gap, according to David Gumpert, a staff writer on HBR and co-author of a book on small businesses. In a review of much of the available U.S. literature about

running a small business. Gumpert says that most publications have done little to belp their readers solve the problems associated with planniog and strategy, marketing, organisational behaviour, exporting and consulting services.

When writing about many important issues many academics and consultants merely simplify the theory and practice used in large companies, be says. Few present exciting or original points of

financing sources, franchising and the problems of setting to government bodies. This fills void for small businessmen. most of whom cannot afford specialist staff or consultants. Despite their - weaknesses. Gumpert says that the new

publications are beginning to answer on important educa-tional need. He believes that they "hold out the promise that researchers will fill the remaining gaps as interest in entrepreneurship academic area coolinues

The publications are by no

means all useless, however,

Many concentrate on short-term managerial and legal problems.

"The increased awareness and new Information should help small business owners do a botter job of managing and add realism to the dreams of prospective entrepreneurs," he

Entrepreneurship: a new literature begins. Harvard Business Review, March April issue, Boston, MA. 02163.

Arnold Kransdorff

Small business abstracts...

Capital budgeting in small companies T. H. McInish and R. J. Kudla in American Journal of Small Business (US), Spring 81 Discusses the net-present-

value approaches to capital budgeting, argues that it may not be suitable for "closelyheld" and small businesses, and explains alternative methods: required rate of return and "certainly equivalent,"
Small business information

systems. P. Hooper and J. Page in Journal of Systems Management (US); Sept. 81 Suggests that developments In computer bardware have not been matched by improvements in usage, and discusses why this is so; with small businesses in mind, describes the development of a generalised information system, and examines the flows of information within and between the component parts.

A Viewdata system for indepen-dent grocers. J. Bamfield in Retail and Distribution Management (UK), Nov./Dec. 81 Describes how retailers in the Spar (voluntary) Chain-

order supplies from James Hall and Co (wholesalers) by telephoning the company's computer and keying-in order quantitics as each item appears on a visual display unit; examines benefits for supplier and retallers, and mentions

Growth planning for small business. J. F. McKenna and P. L. Orbitt in American Journal of Small Business (US), Spring 81

Reviews literature on busi ness growth, particularly as it relates to small companies; stresses the dangers of un-controlled growth, and ex-amines difficulties that may be encountered in a quest for diversificatioo. Presents guidelines for questioning a company's growth process, and considers benefits a "no-growth" option might present.

These abstracts are em-densed from the abstracting journals published by Anhar Management Publications. Licensed copies of the original articles may be obtained at £2.50 each (including VAT and p and p; casb with order) from Anbar, PO Box 23, Wembley HA9 8DJ.

A fertile mind pouring products into an untapped market

MASSIMO RINALDI was one of the early Italians in the world of computers. In the early 1960s he designed what be claims was the world's first desktop computer. Some 14,000 of them were produced by IME, an electronics subsidiary of the Montedison chemical concern, "before the Japanese destroyed onr market by lowering the price." In 1970 he set up a company named Insel with an initial capital of only lire 50m with his partner Franco Pesci devoted mainly to the manufacture of small comouters, the first of which, a

machine for civil engineering

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design, was launched in 1970. New machines and derivations were introduced at the rate of about one a year ever since, and, while its main market was West Germany. the company penetrated the Soviet and Iranian markets by making machines that could cope with the Cyrillie and Parsi alphabets. But the machines were sold through another company, named Saga: Mael, as Insel became in 1979, concentrated on design and manufacture.

At the end of 1980, with Mael continuing to bring ontmore refined versions of its 16-bit business computer, the company was becoming more

involved in special products rather than off-the-peg com-puters and the relationship with Saga no longer made sense. So its exclusive contract came to an end; Saga still sells Mael computers but Mael also uses other outlets as well as developing its own marketing organisation.

trated on selling to the very under-automated Italian public administration; ten ont of 27 Italian ministries bave no computers at all. Rinaldi has developed computers and terminals for the registration of residence procedure which ls such a feature of Italian life, and the company is

gearing up to produce machines for the automation of the postal banking system, pay their blis. It bas won the contract to antomate three of the country's regions

the train, and the range of snpplements and con-cessionary rates is formidable.

system to countries like Greece and Spain which also rely on local agents, rather than on the post as in Britain. Macl will go on making buslness computers, possibly locloding a more powerful 32-bit model mindful of the fact that the 1980s should see the growth in computer use in Italy that France and West Germany experienced in the 1970s. · Rinaldi will go on being both inventor and

managing director. How does be do it? Casually demonstrating the personal computer that be

when I am selling tailor-made applications to meet a client's special needs. I can go to an organisation, see what they require and tell them at once whether we can do it." . Not many companies can do that.

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Computer born in a 12th century castle Geothermalheat may

THE late Duke of Chiablese must have turned slowly in his grave. The 12th century eastle he lovingly restored in the late 1870s was being used to herald an electronic vision of the 21st century.

Amid hundreds of paintings from Crivelli to Crespi at the rostle of Aglie, in the beau-tiful Piedmont region in Northern Italy, Olivetti launched its personal com-

Mr Carlo de Benedetti. vice-chairman, chief executive and major shareholder of Olivetti printed his own pic-ture of work in the future. He said that by the year 2000 even conservative estimates suggested there would be 300m personal computers in

Market share

At the end of last month two major established European companies dived into the aiready crowded pool of per-sonal computers. Britain's own ICL and Olivetti joined the founders of the market like Apple, Commodore and Tandy as well as powerful newcomers on the scene IBM. Xerox and ITT. The only other major European company with a personal computer is Philips. Its P2000 has not been a success—it blames its selling outlets, and is expected to change tactics.

Recently ICL launched its already well publicised personal computer which it will sell through its newly set up dealer network, known as Traderpoint.

CL'a personal computer which will be made at its Kidsgrove

based on the Rair "Black officially, to IBM's irritation. Box" computer and costs When the IBM personal com-between £2,200 and £5,250. puter becomes available in Olivetti which aspires to capture 10 per cent of Europe's

personal computer market by the end of 1983 launched a rather more powerful 16-bit machine the following day... ICL's personal computer like most others currently available is an eight-bit computer.

costs about £2,900 which in-cludes two floppy disc drives and a low cost printer, was designed at its U.S. research Cupertina, in California.

Third party

The basic machine will start around £1,900. It will be made in Italy at Olivetti's plant in Scarmagno at Ivrea. ICL and Olivetti are joining a market which for five years was the sole preserve of small entrepreneurial companies. Last year that market changed as established companies like Xerox, Texas Instruments (aecond try), ITT and above all IBM began to offer per-

In the U.S. the IBM personal Three sections computer (also 16-bit) starts In the UK and most of Europe at \$1,500 but a typical business machine with two floppy diskettes and a printer costs about \$4,500. It is not yet available in Europe and is not expected until the end of the year, although some rumours in the industry suggest it may be brought forward slightly. Because the IBM personal computer is available in the U.S. from third party retail outlets, Sears Roebuck and

Computerland, it is being

bought from shops and im-

Europe it is likely to adopt a similar marketing strategy to the U.S. of offering the product through its own sales force, its own retail product centres and through third party retailers. However, there are fewer professional com-puter chains in Europe.

The Olivetti personal computer Olivetti has no plans, at present, to sell its personal computer, the M-20, through retail outlets. It will sell it directly to larger customers and is in the process in the UK of appointing a network of 100 dealers.

Mr Vittorio Levi, head of Olivetti's operations division said that the nature of the personal computer market involved a change in sales

He said new sales strategies had to be developed which were very flexible and spread over a number of distribution channels, most important of which were the indirect outlets such sa sole agents, dealers and

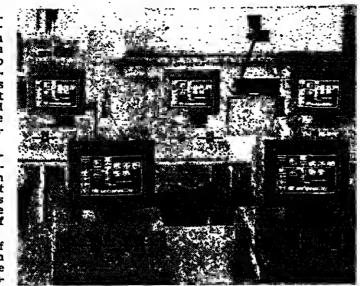
the M-20 becomes available in the early summer and by September Olivetti hopes to have some 30 software packages available. These are divided into categories: Commercial such as typical accounting programs, Scientific and Technical, such as structural analysis and what it calls International which includes cial modelling program, a socalled Visicalc lookalike.

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The Olivetti personal computer will cost about £2,900

hopes to be selling 80,000 computers a year.

The personal computer market growing very rapidly hut so are the number of manufacturers. In addition to the One of the most remarkable personal computer specialists, challenges is the newly giants like IBM and Xerox, there is the prospect of some fiercely competitive products from the Japanese including Hitachi, Toshiba and NEC. Some early sabre rattling from

Hitachi indicates plans to sell a personal computer in the UK around early next year. launch in mind.

challenges is the newly lannched Osborne computer which costs £1,250 in the UK incloding software for word processing and financial projections. In eight weeks it bas sold £1m of computers in

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be energy survivor

BY ANDREW HOLMES

THE GOVERNMENT is presently deliberating the future of various forms of alternative energy. Whatever may be the fate of some projects in the alternative energy field it is likely that heat stored in underground rock—geothermal heat -could prove to be one of the

About 80 per cent of the earth's surface is on top of rock which is hot enough to be used economically for energy produc-

The technology for extracting the heat is deceptively simple -drill two holes, connect them and circulate water through the system to produce low pressure steam at temperatures of around 200°C. But the process for fracturing rock at great depth with the necessary accuracy to connect two narrow horeboles is proving extremely difficult.

Two boreholes

The Camborne School Mines, with a £2.7m grant from the Department of Energy, Is working on a project to extract heat from the granite under Rosemanowes Quarry, near Penryn in Cornwall. The first stage involving the drilling of two boreholes 2,000 metres deep and 250 metres apart, has just heen completed. Boreholes are drilled straight down for two-thirds of the way

and then deflected towards each other at a 30° angle. The two holes are already

must be widened to create a large enough surface area to nake sufficient heat available.
The Camborne team will frac-

connected by the natural

fissures in the rock but these

ture the rock using explosives followed by the application of high-pressure water. The explo-sions will begin in July followed by water injection in October-

Steam pressure

Once the connecting fracture has been made, water at 20°C will be circulated in the system and the researchers hope that it will be at a temperature of around 80°C by the time it re-

turns to the surface.

If tests show that the temperature of the water is consistent, the next step will be to drill down to depths of 5,000 metres to 6,000 metres where low pressure steam at temperatures of 190°C are expected. At such depths it is not certain whether the techniques of direction drilling-borrowed from the oil industry—can he carried out with sufficient accuracy. There are also question-marks about using explo-

sives and pumping equipment at high temperature and pressure. Camborne researches estimate that two or three years would have to be spent developing suitable equipment before the deep experiment can begin. The complete project could take

Imaging for the

robots

The good news is

Selling technolog

THE COMING need for automation systems and robots to be able to "see what they are doing" is generating new interest in the idea of obtaining images of parts under manu-facture or test and processing them to produce data and instructions for the process. Sira Institute of Chislehurst, Kent (01-467 2636) points out that there has always been interest in equipment that will do this but that until recently, it has been either over-complex. expensive, or both.

Cost effective

However, in recent years, the necessary computer processing power for image analysis has been getting cheaper so that now, according to Sira, the problem has become one of selection of the most appro-priate and cost effective system for the job.

So the Institute has launched a survey project centred on equipment selection, starting this month and due for completion within nine Participation costs £750 and more details can be obtained

Cutting salt mine problems

THIS £0.5m cutting machine— Fletcher Sutcliffe and Wild and the only one of its type in the gantry designed by Robert world-is at work at ICI Mond Division's salt mine at Wins-Division's salt mine at Winstured by another member of the ford, Cheshire. Its main purpose is to eliminate roof rock falls.

The 70-tonne, 7 metres wide.

The machine is a possible

The 70-tonne, 7 metres wide, metres high and 8 metres a Goodman cutter, supplied by problems.

L. Priestley of the Edmund Nuttall Group, and manufac-

answer when mining engineers have to blast underground which can, obviously, sbatter

gantry is hydraulically jacked between the roof and floor to provide a rigid platform for the cutter. This can be moved along a slide to cover the fall 18 metres width of the face to a depth of 4.5 metres in four

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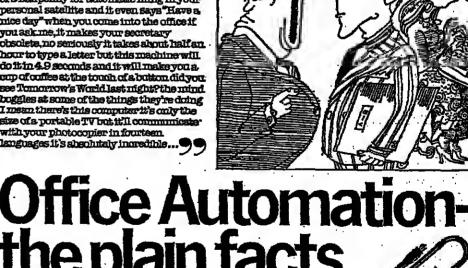
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THE ARTS

Royal Academy

Permanent pleasures

by DAVID PIPER

While the main exhibition majestie — in pomp without condition — the show offers alleries at Burlington House, being pompous — self-portrait much pure and unadulterated galleries at Burlington House. emptied of the splendours of Japan, are being made ready for who knows what splendours of the annual Summer exhibi-tion next month, the Royal Academy stops a gap in its exhibition programme by showing a selection of its nwn permanent collection: the Rnyal Academy Retrospective. This (daily until May 23) is bandsomely arranged in the Private Rooms. It centains many treasures which will seem familiar, yet which may in fact be better known from reproductions than from a sight of the originals. for they are only rarely, in the pressure of the Academy's loan exhibition schedule, available in

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The basis of the Academy's collection has been provided by the gradual accumulation since was founded in 1768, of Diploma works: every Academician is required after his election to deposit an example of his work with the Academy. of the most interesting, and of the most splendid, pieces bowever have come in other ways, mainly hy gift, and of the

This selection will in turn form the hasis of a touring show scheduled to rove through the U.S. next year, at venues from Palm Beach to Seattle, closing in the Britain Salutes New York" Festival in the Spring. As such it will no doubt travel as propagandist for the ailing financial fortunes of the Academy, and is conceived thus far with a marked accent, for Some of the darkening is in subject matter, on the fact certainly irredeemable—in

this context, to be readily attri-butable to an identified artist, lng, not to say off-putting. But but both have thus far resisted

troped since the première. There

is an abundance of cuming

liavable life, and Pag's travel-

ling players make themselves an

bangs fire. In Pag a trin of mule tumblers is elevated to

sub-principal status, bystanders

so o's usively interesting as to

constitute a distraction, or more

precisely to remind us (while

the singers get on with the

onera) that this is a Production.

But that is faithful to the spirit

of Pag. which is in the first

nince a theatrical conceit. and

the singers manage to face down

their connection.
Since the trasic clown of

Leoncavallo's Pagliacci is Jon

lickers, that is hardly surpris-

stage conveys dumb, baffled

power so affectingly, and as

always his performance is superbly finished in apparently

raw detail. His Nedda is Nelly

Miricioiu, lively and conven-

tionally effective, sturdily sup-

ported by Thomas Allen's Silvio and Dennis O'Neill's

Beppe. Only Piero Cappuccilli's

Tonio is a worthy match for

Vickers, finding the lineaments

of ill-will and perversity in his

music and not wasting a gesture.

The conductor James Conlon

Nebody on the operatic

Covent Garden

of Reynolds, acknowledging his, and he hoped the Academy's mentor in the form of a bust of Michelangelo, and the pair of whole lengths of the founding patron George III, and of

Queen Charlotte. These two have never been considered very successful (George III and Reynolds seem not to have found one another congenial) and are indeed fairly stuffy, though grand. I rather hope they will not be amongst the travellers to the States, where George III is anyway not much cherished.

Singleton's comprehensive group, however, of the academicians in assembly must surely go along. It shows the artists — all lonking self-consciously respectable — grouped about their enthroned President. That President, Benjamin West, the second in the Academy's history, beld office for 28 years. and was of course an American. The Academy, however, has a

hit of a problem on its hands, as it would be a great chame if many, if not most of the paintings involved were to travel 55 exhibits here, less than half without some cleaning. In this are in fact Diploma works. paintings through a veil of old varnish with some pleasure, but the Americans prefer Old Masters to give the appearance of being as fresh as the day they were painted. Here is a firm epportunity for a sponsor to underwrite the costs of cleaning this important collection before it sets out un its amhassadorial role to the New World.

subject matter, on the fact certainly irredeemable—in Academy's function and history. the Singleton group of the Thus it npens with those two Academicians, you can see charming but tantalising views Reypolds Queen Charlotte hangof an Academy at work — the ing in the background, very Antique Room unconvincingly much higher in key of tone than attributed to Zoffany, and the the original alongside is now, and view of a Life School; but it is certainly no longer both are works of a quality possible to bring the Reynolds which ought, and especially in back safely to that level.

apart from an educative lesson

Cav & Pag by DAVID MURRAY

Zeffirelli productions, 1959 sticated ingequity of Lenn- Alfio, Karl Nurmela, bas the

vintage, lovingly revived: a cavallo's score. Better still be right solid decency (and a well-

good evening. The sets have puts a most attractive face on produced baritone), but not the evocative silhouettes, and Mascagni's much stupider music easy panache for his entrance already a certain period flavours for Covolleria Rusticana. The aria; his Lela Phyllis Cannan.

the lighting makes the most of verisma libretto of Con might suggests volatile glamour with-them, even against a cyclorama thave invited a score of as much out actually striking any sparks. psychological detail as Jose

phine Barstow, the Royal

nitural detail — the Sicilian find in it; in fact the opera ing. Wherever a phrase convillage piazza of Can has a be-merely contrasts a few tains theatrical truth she seizes

mercly contrasts a few generalised moods, of a would-be amplitude that the action

al fresco supper when the action scarcely justifies. Hell-for has called ber singing "strained

wasn't on offer, and instead Mr

old-feshioned sweetness and

refinement - Mascagni's best

In the sympathetic context

eclat. Giuseppe Giacomini is a

severe Mamma Lucia. The new

the invitation of the Royal Phil-

harmonic Orchestra to become

President-in succession to Mal-

colm Williamson-for an initial

founder. Sir Thomas Beecham-

undertakes his first, official func-

Menuhin, who has had a par-

five-year period.

vein - with nice tact.

Conlon tapped the music for line.

pleasure. Not only, for example, Constable's Diploma Work (The Boat Passing o Lock) but the exhilarating full-scale study for The Leaping Horse, and a whole set of those brilliant, small, studies of English weather, snatched down out of the passing moist moment in oils on to a sheet of paper, of which he was the unsurpassed master. No brownness, no dimness here. In one, the sky, burdened beyond bearing, tilts, and sheds in ragged sheets its water on the world. Gerald Manley Hopkins might have done it in verse, but rather later.

And there are some hril-liantly fresh portraits — Beechey's version of Prinny, George IV, as Prince of Wales, for example, threatening perhaps adiposity (chin trembling on becoming chins (but strapped, outrageously hand-some, by silver hraid into his uniform. Raehurn's irresissoppy little-hoy-with-

There is Turner; there is Stubbs, in some of those rivetingly anatomical drawings of the horse. There are the Victhrian exhalations of the deep sight from the sentimental bosom - Frith on The Sleeping Model. Millais (who never went to Spain) on a Sourenir of Velasquez, a little girl as succulent, not as dry sherry, hut as Turkish delight. There are (thrown in as honus beyond the eatalogue's limits) stunning architectural drawings - and these surely must go with the rest to the U.S.

To see what Sir John Scane, given the chance, would bave provided for the House of Lords as habitation is alone worth the trip to the Academy, which was realised but which we all watched being razed to the ground without much

Miss Barstow rises adequately

to the pop climaxes, and is

it, but the score offers ber too

little. A respected colleague

searching for Mascagni's bland

One remembers that similar

things were said more than 20

years ago of Vickers' Samson

(Handel), the role that first

appearing in the same hill with

while there's still time?

Opera's new Santuzza, tries to elsewhere continuously interest-

leather singing can cover the and unsteady"; I should say seams, but on Thursday that rather that it was too anxiously

Conline provides, the singers displayed his unique strengths.

perform well, without special It was tentalising to have him

reasonaly lusty Turiddu, with a Miss Barstow, hat not together:

useful spivvy quality, and Eliza- wun't somebody find an opera-

beth Bainhridge makes a cool, to accummodate them both



surement by Henry Stacey Marks, from the Royal Academy's permanent exhibition

about to olam down the corrugated from lid with the clap of

As supreme masterpiece the Academy offers its great tondo by Michelangelo, the Madoona and Child with Infant St John, the Madonna conceived and brought to the brink of finish and there left in such tenderordinary, but still unresurrected sculptor. Thomas Banks: his Falling Titan of 1786 commands attention. The naked titan falls

is with Stanley Spencer's Dust-bin of 1956: a tubular Spencer and a goat incised on the base, lady laying dead flowers to rest, and the whole plece expands in the Imagination to a colossal scale as one looks. It could be a modello for a monument as rast as St Paul's,

Variety is lent by some of the Academy's handsome plate, and a note almost of domesticity by the folios in which are recorded mandatory gifts of silver from early members. Jainur Column in Imperial But less well-known, the but each spoon is recorded with vision of the Euston Arch, which was realized but as it the artist gave up the Spoons, doubtless cheapest, seem to have been the favourite, but each spoon is recorded with or Philin Hardwick's diploma work of that extra- a fresh adjective. There is a which was realized but attain ordinary, but still unresultanced. spoon; a brilliant, an incompar-able, indeed a "green peas" spoon-s litany closing on an all attempts. - Portraits of the in training the eye in assess- bonour or fuss. The furthest beadlong in a collapse of huge oddly contemporary note with founding fathers include the ment not only of quality but of the exhibition comes up to date rocks. The gigantic scale is "a real great spoon."

Dominion

Fidelio

Harry Kupfer of the Komische Oper in East Berlin, disliked by some fincluding Rodney Milnes on this page) who saw It last September in Cardiff, Thursday. Kupfer, a promioent member of the post-Felsenstein generation of opera producers, is a potential master whether you like it nr not In spite of . what feels like decades of exposure in studiously dreaty German grey and black with white Brecht lighting (with in this case some Wieland Wagner chorus routines for the prisoners), I found the effect of

notoriously awkward Singspiel elements in the early sceoes appeared so well integrated with the opera's main theme. Rupfer achieves this with onlyjust-controlled hysterical movement, rapier-sharp timing, and adroit exploitation of a hasle-

the first act of this Fidelio acutely absorbing. Rarely have Beethoven's

Weish National Opera's ally classical set with four free-Fidelio in the production by standing pillars that happen to Harry Kupfer of the Komische be posts supporting concentration-camp lighting. That we are nn the edge of grotesque parody, even self-parody (Germans not infrequently parody their own behaviour — so do somebow lends more strength than weakness.

The second act is a very mixed bag - I recall a similar decline in an earlier Kufer Fidelio, already worn at the edges when it was shown at the Dresden Festival in 1978, where for an English visitor there was an incalculable factor in the Dresden public's stony-faced tension. The present treatment of Pizarro and Rocco is illuminating, but the set, with grey drapes flapping in the draught, won't do for a deep dungeon. The final deflating tableau, with the motley elements of Michael Geliot's ENO Damnation of Fanst squashed on to one small

platform, is a mess.
Unfortunately some of the producer's expertise backfired on to the musical side. Both Bizarro (Julian Patrick) and Rocco (Stafford Dean) were atronger, more interesting in spoken dialogue than in singing. Is there a dead spot in the middle of the Dominion stalls? The only voices to come over easily on Thursday were those of Marzelline (Helen Field) and, in hio aria, Florestan (Dennis Bailey). The Leonora of Anne Evens was puzzling. One rarely hears the role so competently.

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RONALD CRICHTON

Festival Hall

St. Matthew Passion

by DOMINIC GILL

It was tempting to try to voice choir. Most indeed make sample all of the St Matthew ence, my choice fell on the formance with the English Chamber Orchestra uoder Nicholao Cleobury at the Festival Hall (if you are going for the music, St Paul's Cathedral is the last place on earth, except possibly the Grand Canyon, in which to choose to hear Bach).

Any concert hall performance of this Passion, with choirs and instruments on stage facing the audience, must in some respects fundamentally compromise the most especially the marvellous antiphonal effects of two choirs and orcheotras, played by Bach at the east and west ends of St Thomas's Church in Leipzig, each group with its own continuo and quartet of soloists. calling and answering from side to side.

Few performances these days riss the point so completely as land thence back to Meodelssohn's Bach-revival of the and it would have worked still 1820s) ensembles of massed better no this occasion if the symphony orchestra and 1,000- two choirs had not been incom- Jesu, gute Nacht "!

a decent bow towards observing Passions-no less than four- at least the spirit of Bach's basic being given around London last requirements-although nothing Good Friday evening: but can truly replace the proper musical sense prevailed over arrangement of two widely curiosity, and for no better separated choral groups, each reason than acoustical prefer- accompanied by a chamber ensemble of no more than London Choral Society's per- around 15 players actually using the instruments so meticulously prescribed by the composer. Nothing else adequately marks the antiphonies, which themselves spring from the dialneue nature of Picander's libretto and from which in turn springs much of the great dramatic force of the Possion; and nothing else captures the magic

of the colour, texture and inner

balance of the music, so meticu-

lously imagined.

This LCS/ECO performance adopted the fairly common compromise of using about one-third again as many (and modern) instruments, and more than twice as many voices, as Bach asks for (though, presumably for reasons of economy, nnly half as many soloists and one. not two, riola do gambo). That kind of scheme can work perfeetly well in its fashion teven If there is always far less those given by the old pre-war excuse for having 100 many, as apposed to too few, performers);

prehensibly clustered together at the centre-back of the stage. undivided even by the riplent boys' chorus - there was room enough to have allowed a good 20 feet of space between them, to the greatest visual as well as musical advantage. Cleobury's direction was eap-

able and straightforward-plain,

sensible stuff that east little light on the finer points of the drama. The chorales especially, sung mainly rather last and uninflected, eften without heir end-of-line pauses, were rarely the time-transcending reflections they can be twith the single exeption, beautifully expressive, of the very last chorale, "Wenn ich einmal soll scheiden"). The vocal quintet was disappointing: the Christus of Willard White alone found a certain colour and depth in his solo part. From the ECO players, on the other hand.

many fine solo contributions. The performance was sung in a revised version of the Novello English translation-which was another pity (a translation with the text in the programme is all that is neededl, and another dilution of authentic flavour. How much less effective and more stuffily pious is "Lord Jesus fare thee well " than Picander's robust and ashamedly sentimental

Television

Tony Palmer's Stravinsky

by DAVID MURRAY

Three hours of television well chosen to make imarguable out a whist of "explaining the about Igor Stravinsky could hardly be horing - I doubt that thirty hours about Stravinsky be horing, so long as they stuck to facts (as Tony Palmer's film did) and spared us opinions; but three hours also gives epic scope for nit-picking. particularly by the superlor Stravinskian who doubts that musical-snippets - with - pictures say, by selecting Stravinsky bits can serve any honest purpose. 10 make evidence for some ex-

Friday and Saturday evenings, us, often with splendld resourcewas neither straight performances nor exercises in photos, interviews with old "musical appreciation." It was Russians and with the com-Illuminated biography that cut poser's children, playbills, bappily back and forth between other people's music. The only archive film of the composer "opinions" on offer were and a wealth of visual footnotes solicited from friends and and amplifications — quick, nn-erringly apposite and utterly hold them. disarming. It is str

points, but more of his own voice-over than one would have thought possible tmostly. I think, reading from his pub-lished "conversations" with Robert Craft).

He was authentically present. then, and Palmer never weakened the effect by putting him in a tenientious context-What LWT's South Bank ternal thesis; he simply found Show gave us, divided between the necessary background for fulness. There were antient musicians who had a right to

It is strange that music so not only the music, in snippets made that quite palpable—with- sion, incid and respectful,

music away." Granted that coatplete performances were no part of the plan, we got a very fair conspectus of the pungently various Stravinsky sound (enough, surely, to entice many viewers to investigate more of the ocurre beyond the familiar standards), aided by the slereo sound-track on Radio 3.

Occasionally a viewer might have had the impression that a work referred to on screen was what he was hearing, which wasn't always true, but it didn't matter. Whalever the level of one's acquaintance with Stravinsky, there were bound to he rewards among Palmer's brilliantly organised troarmiles: above all, the uncanny privilege of further acquaiotance with that stubborn artist. All the virtues of the film seemed in The flow of images, from Idyllic St Petersburg through Europe and America to the funeral in Venice, was funeral by Stravinsky— was specifically connected with the course of his long, fascinating of Palmer's film, which ing life; but it is so, and Palmer achieved miracles of compressions and sale with relief and respectful

Palace

Song and Dance

by MICHAEL COVENEY

for the Theatre." In the first half Marti Wehb sings "Tell Me On A Sunday," a song cycle about a girl from Muswell Hill moving to Manhattan and through relationships with a producer, a younger man from Greenwich Village and a married Casanova. After the internehulous effect during a per-formance of Lloyd Webher's Wayne Sleep's bid to become Variations on the A-minor the Rohin Cousins of classical Caprice Nn 24 by Paganini.

ostentations, less theatrically Variations, familiar to South coherent evening. The curtain Ecnk Shor watchers, had the rises on Harry Rahmowitz olid-horrible effect of persuading ing down stage at the head of me that Melvyn Bragg was his divided hand in a hint of about to descend from the flies dry ice. A scaffolded truck and kick up his hecis. The

Andrew Lloyd Webber's reveals Miss Webb in its centre, credits on TV always start with double bill is somewhat pom-pously sub-titled "A Concert with a late-calling admirer. A from the Cistine Chapel — fool glassy, flying backgrop becomes the recipient of the picture post through forked ligatimes. Seep, card projections. In addition to in this case is Wayne Sleep, who brings his corps to life. in the big city. I am delighted that Miss Wehh, who took over in the role of Evita, has been given ber blg stage chance. The voice is full, expressive and with val. Wayne Sleep and eight a fine range. But shut your dancers leap about to pretty eyes and it could be anyone.

ballet is not a career that tion for a dramatic programme. Caprice Nn 24 hy Paganini.

It is a very long time since I exerts an irresistible fascinahave sat through a more tion. The opening chords of ostentations, less theatrically Variations, familiar to South

from the Cistine Chapel - Goil very startling choreography by Anthony Van Laast (although I liked the blond hoy who does eartwheels with no hands). including the regulation too number and a lot of winsome coupling among the ranks. Cosmic grumbles and cheeky Sleep asides (fawlty winks, i.d. call them) prove no substitu-

The orchestra churns up a fine old blare, but the Variations run out of interesting ideas after about teo minutes. The mundane lyrics for the first half are by Don Black. the overall direction by John Caird.

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Roval Albert Hall than £100,000 worth of tickets ticularly close association with the RPO since the days of its have been already sold. Mr Menhain said yesterday: "Fate decreed me to be a solo violanist from the age of seven. tion in his new capacity when be welcomes the orchestra's I suppose I should he grateful 22 (Fairfield Hall)

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On to 1984 with Menuhin Yehudi Menutiin has accepted patron, the Queen Mother, to for that fortune. However, what the invitation of the Royal Philipe Royal Gala Concert at the it did deprive me of was the company and brotherhood of be-The concert which inaugurates the RPO's National Appeal, will feature the great Italian tenor, Luciano Pavarotti. More to expect, I have received this bonour."

He will conduct the orchestra evenly sung. One sensed in London on May 20 and 23 commitment, yet the result was (Roya) Festival Hall), and May half-frozen, almost ventriloquial.

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I A secret gift-the French wine, a litre, put in pavilion (6, 6) 10 Got up with joint and fruit (4-3)

11 Box according to a captain (7) 12 Approach an audio-receiver

13 A call for help about to get the better of fibrons serpentine (8) 15 Begin with a plant producing nil for a spell (4-6)

16 Lots of fish put right inside a tin (4) 18 Two Scandinavian books in refined Danish (4)

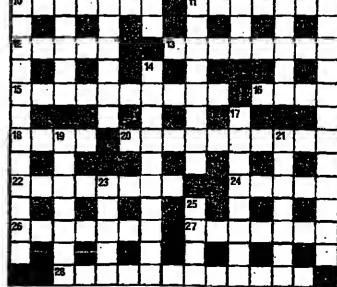
20 The chief trend in artistic development for a select division of pupils (4, 6) 22 An nnexpected legacy—from fruit? (8)

24 Sincere Frenchman in his province (5) 26 Pedal part sailor returned (3-4)

27 Duck, to confine the wings nf, in indgment (7) 28 Unusually rich and dense type of porcelain (7, 5).

2 Severe south-wind with energy (7) What an anaesthetist may do there, is converted by direction (8) 4 South American Indian I put

up (4)



people in a way (10)

6 Refugee I left in river (5) 7 Barman with a gentle knock upset the rest (7)

8 Go hack on a promise and abatter a weapon (5, 4, 4) 25 Look applied to a rascal (4) 9 Doctor in an exhibition right now (7, 6)

14 Unusual pose called for the edgo to be cut into curves (10) 17 Pre-eminent swimmer, a member of the Asteroidea

5 Evaluation for tax fools 19 Indicated by a sign, but nor in an act (7)

21 Outgrowth from Eas American Indian tribe (7) 23 Sluff in a ridiculous show

The solution in last Saturday's prize puzzle will be published with names of winners next

Tuesday April 13 1982

Diplomacy to the rescue

SO FAR, so good. The extra- problem would remain the same. hein: conducted hy Mr. Mexander Haig, the U.S. Secconducted and Buenos Aires tine claim could he revived. between seems to be working—at least to the point that there is now a greater awareness in hoth Britain and Argentioa of the focussed on a more durable need for a negotiated settle- settlement. The Security Counment of the Falklands dispute. cil at the United Nations has

Other countries, too, have heen helpful. Peru bas proposed a cooling off period while negotiations continue. The European Community has excelled itself hy agreeing to a ban on Argentine imports and a balt to arms sales which, at the very begin-ning of the dispute, Britzin never even dared to ask for. European solidarity is not always a chimera-a fact which the British ought to remember in future relations with the

Realisation

The main point, however, la that with the aid of the U.S., tempers seemed to have cooled. It is entirely welcome tha the U.S. which has more than a foot in both camps — Europe and Latin America, should have behaved in such a faashion. It is a long time since a superpower has sbown such responsibility in seeking a peaceful solution to an International dis-

At the start, there were two nationalisms: Britain's and Argentina's. The danger was that they would feed on each other to the point where armed confrontation became unavoidable. Yet now the realisation seems to have dawned that the dispute is a complicated one not jue the result of naked aggression, though the Argentinian invasion was certainly that, but also the product of a longstanding historical anomaly.

Durable

The Falkland Islands were, indeed are, British. But it had been clear for some considerable time that Britain lacked the ability to defend them against a nower with counter-claims, however dubious, and which was in any case so much nearer: bence the efforts of the Foreign Office over the years to reach a diplomatic solution before the debacle occurred.

If the British were to reoccupy

ordinary shuttle diplomacy At some stage, the Royal Navy would have to return to more familiar waters and the Argen-

> It is the merit of the international diplomacy now going on that attention is being been used to good effect. Reso-lution 502 did condemn the invasion and called unequivocally for withdrawal. The Argentine regime appears at least to have taken note, as well as to be heeding the entreaties of Mr Haig. And, in truth, the regime must know as well as anyone else that theer are all sorts of other sanctions that could be thrown at it. The country's economy is in too parlous a state for it to risk total international isolation.

> Yet if Argentina seems to have backed down slightly, in time there must also be some movement from Britain. It is no use seeking to return to souare one and staying there. The status quo onte has been shown to be untenable. The British are right to go on pressing for an Argentine with-drawal, as the Security Council Resolution demands. But they would also he wise to star discussing ideas of trusteeship shared sovereignty or any other variant with Mr Haig, the Organisation of American States or any relevant body.

Parliament

The decision to recall Parliament this week is correct, if only so that Members can be given a account of the state of play which is substantially different from the end of last week when it went into recess. It was notable even then that the mood of MPs was markedly less hellicose than in the first emergency debate on the Falklands on Saturday, April 3. We would hope that it will now have cooled down even further.

Any right-wing Tory MPs who resent the American interven-tion should he firmly squashed hy the Prime Minister. What has happened is that diplomacy is heing given a chance. That is much better than the shooting war which, though it still cannot be ruled out, looks rather less likely than a few

Reviving the inner cities

THE ROOTS of the social and interest rate subsidy or guaraneconomic problems in Britain's tee to persuade a company to inner cities stretch hack 80 or more years; it is unrealistic to expect them to he solved overnight or even within the life-

time of one Government. That could be no justification elther for doing nothing or for continuing unchallenged the pattern of previous years, which has mainly involved throwing large amounts of public money at the problem without achieving any nnticable halt to the decline. If there were ever any doubts about that, last year's urban riots dispelled them once and for all as Lord Scarman's unambiguous report later under-

Although the Cahinet was shaken by last year's events Mr Michael Heseltine, Environment Secretary, seemed to be the only minister to perceive the extent of the problem and the long-term dangers it posed. The issue hecame his over-riding concern, replacing both the complexities of local government finance and the challenge of trying to introduce modern management tech-niques into his enormous department.

Improvement

So now, a year later, it is not surprising that while the Cabinet collectively has no answer to the charge that not much has happened Mr Heseltme individually can claim that he has sown a number of seeds which should provide some longterm improvement

The main initiative, announced last week, is a scheme of urban development action grants (UDAG) inspired by, and closely modelled on, the U.S. system. It will, as guaranteed in a vital paragraph bursed in the talking to the private sector Budget statement, provide £70m and preparing schemes immeof new money in the first year for projects within the 43 most deprived urban areas. But it will no longer be money freely handed out to he poured into lar scheme for derelict land more public-sector schemes.

The money will be available only for local authority schemes underspending on the local which have already attracted a authority capital account in commitment of substantial 1981-83 indicate that councils funding from the private sector.
This makes the UDAG funds quickly on capital schemes. "persuasion" cash — money which might tip a commercially unviable project into viability It is now up to the institutions or might provide enough of a and local councils to respond boost through a soft loan, with the same sense of urgency.

become involved in an area which it would not otherwise contemplate.

This initiative, which is radical move away from traditional British approaches, is welcome. All credit for it goes to Mr Heseltine's Financial Institutions Group (FIG), his 25 managers on secondment for one year from leading banks, companies and institutions.

Answers

This is only the first of a number of FIG initiatives in the pipeline. The group has been working industriously, knowing how heavily the nation was relying on it to find new answers to intransigent prob-lems. More proposals on hous-ing, small firms, development and the active involvement of institutions in inner city projects are awaited.

But a number of potentially serious difficulties appear to be looming.

A major objective of FIG's creation was to examine closely and critically the role of the institutions themselves and to try to find ways of involving them in tackling a national problem. But there are signs that some institutions, baving seconded members of their staff to FIG, are reluctant to involve themselves more directly in the liner cities and are even resisting some of the FIG proposals.

Another possible difficulty is the attitude of local authorities. The Government wants bids for UDAG money by September so the grants can roll into cash flow at the heginning of the financial year next April. This means councils must start

Urgency

The alow response to a simigrants—another form of UDAG —and the remarkable level of

Mr Heseltine and FIG are playing their part to the full. U.S. BUSINESS CLIMATE

A downturn with a difference

By Richard Lambert in New York

THE WARNING SIGNALS

IRST IMPRESSIONS are often dangerous. But after a few weeks in the U.S., it is difficult to ignore a feeling of deep foreboding within the business and financial com-

This stems from the fact that the present business cycle is unlike its predecessors in two obvious respects.

The first is that despite the low level of ecenomic ectivity, real interest rates stand close to their post-war peaks. At a time when the underlying rate of inflation is running at about per cent a year and falling, the prime rate stands at 16.5 per cent and long dated Treasury bonds are yielding over 13.5 per cent.

The second hig difference is that the corporate sector is in a frail condition to cope with a tight squeeze on profits and cash flow. By almost any yardstick you care to use, a prolonged period of deterioration has left companies' key balance sheet ratios in a worse shape than at any time since the war. Such a combination is deeply

unsettling for U.S. businessmen, and seems to be overriding the one unequivocally good piece of economic news in recent months — the sharp slowdown in the rate of in-flation. Net finance costs are gobbling up about one sixth of the company sector's pre-in-terest profits at a time when selling prices are coming under increasing pressure. The result has been a sharp increase in the rate of business failures. to the bighest level in 20 years. During a period of rapid price

Large companies plan to scale down capital spending

inflation, it made sense for com-panies to horrow heavily. It seemed a paintess way to increase the return on share-holders' funds, since the falling value of the dollar meant that the real co.; of the loans was negligible. So it was that in the six years to the end of 1981, the total debt of nonfinancial companies in the U.S. roughly doubled, while the pro-portion of short-term lightlilies rose sharply.

But now the position has changed with a vengeauce — which helps to explain a view widely held on Wall Street that movements in the cost of money during the next few months could have a critical impact on the lang-term future of wide swathes of manufacturing in-dustry. If these were ordinary times, it would be reasonable to argue that the tide of recession was now lapping somewhere around the low-water mark — with scope for a marked upward surge in the second half of this year. After a three-year silde, the number of housing staris seems at last to have hit rock hottom. Motor car sales still look dreadful on

as Dow, Caterpillar, or Weyer-baeuser — which have spending is rising sharply, and there is a tax cut coming on July 1 to belp stir consumers into action. In a --- which traditional cycle this is just the point when credit conditions should he at their slackest and, with an upswing in business activity and profits in view-share prices should be surging.

But look around. A mortgage costs you 16 or 17 per cent at a time when house prices — at best — are not rising. Half a dozen important companies in several different sectors of the economy are in dire financial d'fficulties, and no-one wauld he su: prisen to see a few major bankruptcies in the near future.

CONSUMER

PRICES

The farming sector, is flat on its back, with the purchasing power of farmers down to the lowest point since the 1930s. The savings industry is in a state of turmoil: the savings and loan associations, which are mainly involved in making residential mortgages, are currently losing money at an annual rate of \$6bn, which is equal to about one afth of their combined net

Far from taking an increasingly hopeful view of profits, Wall Street is busy revising its forecasts downward. Lynch, Jones and Ryan a broking firm which tracks the work of about 60 hrokerage houses, says that more analysts marked their forecasts down in March than at any time in recent years and their figures may still be too high. On average, hrokers continue to project a modest in. If it prints more money the rates are going to able after what is likely to bave been a grisly first quarter. Tentative forecasts for 1983 imply a profits rise of nearly one fifth next year, which also looks a hit hopeful.

A good old fashioned husiness upturn looks increasingly year-to-year comparisons, but unlikely. A feature of the last bave sb wn more stability in few weeks has been the num-recent months. The level of her of large companies — such

announced plans to scale down their capital spending in a hig way. The Department of Commerce's quarterly survey bas already shown a sharp fall in the rate of capital speoding planned this year compared with earlier expectations. The hacklog of orders in the machine tool industry has fallen by nearly 30 per cent in

RATIOS FOR

BUSINESS

CORPORATIONS

NONFINANCIAL

For similar reasons, manufacturers are unlikely to start

large corporate failures."

the space of six months.

any great extent in the present climate. When money is expensive and input prices are falling. stockbuilding makes no sense.

CAPACITY

UTILIZATION

The latest survey hy the National Association of Purchasing Management shows that the proportion of members reporting falling prices is the highest for 30 years. And the number which are only prepared to commit themselves to buying no more than 30 days forward has also risen sharply, in this case to a nine-year high.

As a result, no one now seems rehuilding their inventories to to expect anything hut

anaemic recovery economy during the latter part of this year. The kind of numof this year. The kind of num-bers you hear most frequeoily on Wall Street indicate a fall of about 4.5 per cent in gross national product in the first quarter of 1982. That might be followed by a very modest rise in the second quarter as destocking runs its course, and by a gain of maybe 4 or 5 per cent in the second half of the

1920 '30 '40 '50 '60 '70 '80

Per 10,000 Listed Concerns

BUSINESS

FAILURE:

RATE

The real worry is about 1983. Without a worthwhile fall in real interest rates, there seems every chance that recovery wili splutter out and die in the early part of next year. So why are interest rates so high? The stock answer is that the

Administration's monetary and fiscal policies are in direct conflict with one another — the one restrictive and the other expansive. The result is a high "By all the rules of the game, interest rates degree of uncertainty about the financial outlook over the medium to long term, which in turn has been reflected in the

"I consider the proposed budget to be not a cost of short term money. blueprint for recovery but a recipe for even greater The conlinued demand for credit by companies - which disruption in our economy and financial markets." must reflect at least partly the -John McGillicuddy, chairman, Manufacturers Hanover squeeze on their cash flowshas surprised many forecasters. And with the long term bond market more or less closed "My instincts tell me there will be one or two down in current conditions, this --- Malcolm Baldrige, Commerce Secretary demand for money has been heavily concentrated at the short end of the market. Pre-"If the Fed does anything different from what it is now doing, it will abort what we're now engaged hopes that the present policy nor be all that great. Indeed, conflict will he resolved by a tightening on the fiscal side. dividends altogether last month Indeed there are those who than at any stage in the last argue that a more accommodating monetary stance by the kicked off with the mighty Ford Motor Company announce.

inflation.

The subject to which all contrailon's budget strategy - and

soon. The hawks say they will only he satisfied with a "two-digit deficit"—less than \$100bn—in 1983, which could mean shaving the present number by

S50hn or more.
Others argue, probably more realistically, that what is needed above all is a change in direction — a credible set of numbers that would point to steadlly falling budget deficits

in the years to come.

As things staod, estimates seem to rise by a few hillion seem to rise by a tew hillon almost every other day and there is an uncomfortable feeling that fiscal policy might be shapping out of control.

Some form of hudget compromise will presumably be worked out in the quite near that it is a pelection year, the

future. In an election year, the shape it takes will depend on how far the pain of reducion how far the pain of reducing planned spending programmes or increasing taxes is seen to the outweighed by the need to do something about the crippling cost of money.

There is certainly a sense of ingency in the air. Some industrialists and bankers go as far as to suggest that irreversible domage will be done to

sihle damage will be done to the corporate sector if interest rates are not brought down io the next couple of months.

That sounds too cataclysmic. What strikes the European visitor, perhaps above everything else, is the sheer size and spread of the U.S. economy. Problems that might appear devastating home can be absorbed here

without too much damage.

Hnwever, political decisions in the next few months seem bound to have major repercus-sions on the outlook for

Fiscal policy might be slipping out of control

economic growth in 1983 and beyond. And until they are taken, the financial and busi-ness picture will remain cloudy. In the securities markets, some of the bolder souls are beginning to talk with more confidence about the case for longdated honds - which would be overwhelming If it was clear that present trends in inflation could be sustained.

But there is still a great deal

of uncertainty in the equity market. Shares yield about 6 or 7 per cent, way below the going rate on bonds. And given the present outlook for profils and the poor financial condition of so many companies, the scope for dividend growth dictably enough, Wall Street over the next year or two may more companies passed their ing no payment to shareholders for the second quarter in a row.

As one veteran of half a dozen business cycles put it last week: "We all know that the On the need to cut the hudget deficit moment is the need for a gets real thick. The trouble is radical overhaul in the Administration that this time the gloom is real

uncertainty."

rise in overall earnings this go up. if it tightens up, the rates are going to go up."

year — which seems improb--Walter Wriston, chairman, Citicorp "There is only limited time left. It is a difficult. Federal Reserve Board would Ford Motor Company announce task, to say the least, but delaying will be dangerous since it would be taken to sig-

What they're saying

should be down around 9 or 10 per cent.'

in terms of financial uncertainty and economic nal the end of the fight against

Men & Matters

Air power

Why has the mighty Racal-Decca taken the trouble over the Easter weekend to take expensive Press advertising to promote an obscure piece of hardware, namely a new navigational device for yachtsmen?

The answer lies in a dispute between the two European electronics giants Philips and Racal-Decca. They are provoking each other hy action and counter-action — and in Racal-Decca's case by added threats of resorting to the law.

The rumpus is over the use of radio transmissions which can tell yachtsmen and fishermen at sea exactly where they are whatever the weather, Since taking over Decca, the Racal-Decca group bandles the Decca Navigator system which has been popular with commer-cial shipping for 35 years.

Decca made it a moneyspiner by a strict policy of refusing to sell the receivers. They bave been available only through rental arrangements for about £1,000 a year apiece.

Now, bowever, an ahrupt change in policy has occurred at Racal-Decca. It has rushed on to the market its new small receiver for yachts and fishing boats which will be sold outright for £1,500. It will he surprising if a number of commercial ship-owners do not also take advantage of the new set in preference to continuing their Still together rental arrangements.

Racal-Decca is not changing a successful policy on a whim. It department have been having a is thought to be reacting quickly legislative spring clean. And to a threat from the rival company Philips. The long Decca monopoly has been upset by Philips having one of its sub-aidiaries in Copenhagen make and aell what is called the AP Navigator. That little gadget, the size of a couple of shoeboxes, spells out latitude and longtitude. And how does it do it? Why, it listens in to the Racal-Decca stations.



"Just keep away from TV, radio and newspapers for a few days—you've got a had case of Jingoism."

Racai-Decca cannot sue ail users of its air waves because some of the transmitters sated in Europe are under the control of host governments. But the group does intend to take legal action against anyone using what it calls "unauthorised equipment" to pick up its radio transmissions inside British territorial waters.

Officials of the Irish Justice among the flotsam and jetsam which has turned up is, sur-prisingly, the Act of Union of 1800 which merged the then kingdoms of Great Britain and Ireiand.

It seems that in spite of Irish independence in 1922, and the declaration of a republic in 1949, nobody has actually got round to formally abolishing the

The Act's end should be into the time students can make easier than its hirth. The Irish Parliament of 1799 had to he Never a place to take itself Parliament of 1799 had to he cajoled, threatened, ladeo with patronage, and outrightly hribed, hefore it could be per-suaded to wind itself up for good. On the other hand the Dail is expected to revoke the Act without so much as a speech -never mind a division.

Chain reaction

The Forester chainsaw attachment—it can convert the dead elms lying round your estate into planks—was reported on the FT's Technology Page on March 23.

Two days later Mr Visram, managing director of the manu-facturers 'phoned the FT.
"Help," he said, "Our switch-board can't cope." "Neither can we," said the

FT switchboard, the FT library. and the Tech Page secretary, as reader's inquiries rolled in. Mr Visram 'phoned again.

"I'm getting calls from Madrid, Canada, Finland, Sweden, and Norway" "How do you do it?" "A trade secret" said the Tech Page people. They tell me that one item printed last October resulted in sufficient orders to keep a

small company going until next August. Cool Harvard

They are turning down the heat at the Harvard Business School. The number of hours spent in class by first-year students is to be cut by about 15 per cent and the work load of second-year atudents will also be pared.

The school says that pressure of work has huilt np in recent years to a point where it has begun to affect the quality of students' output. More to the point perhaps, it has also bitten

anything hut seriously Harvard examined how its programme had changed over the years and found its number of pages of assigned reading had climbed by 79 per cent to 9,813 pages hetween 1958 and 1980 and its students were working far longer hours than at other U.S. business schools. But Harvard dnes nnt want

anyone to think it is turning itself into a health farm. Its worklosed will still be far beavier, I am assured, than at rival tycoon hatcheries. "We haven't made it easy for them." said one academic. just changed it from the impossible to the hard."

Wham

During the Falklands emergency a special Cabinet committee responsible for maintaining national wit, humour, and morale (WHAM) is looking for support. I will provide an extra chuckle ration for this one day only.

• The Birmingham Chamber of Industry and Commerce is advertising a semin e on Export Opportunities in Argentina.

"Methods of entering the rearket" will he explained—by amphiblous assault craft, I

 From Dublin comes the tale of the man who told his parish priest that in six weeks he had ost £1,000 on the horses. "Every day I went to St Patrick's church and prayed for guidance." he said, "hut still I lost." "St Patrick's?" said the priest. "You fool! That's the one for flat races. "

• In a City cafe: " I know she's got three good A-levels, Angela, but I think Mr Willis took her on because of her two good eye-

Observer

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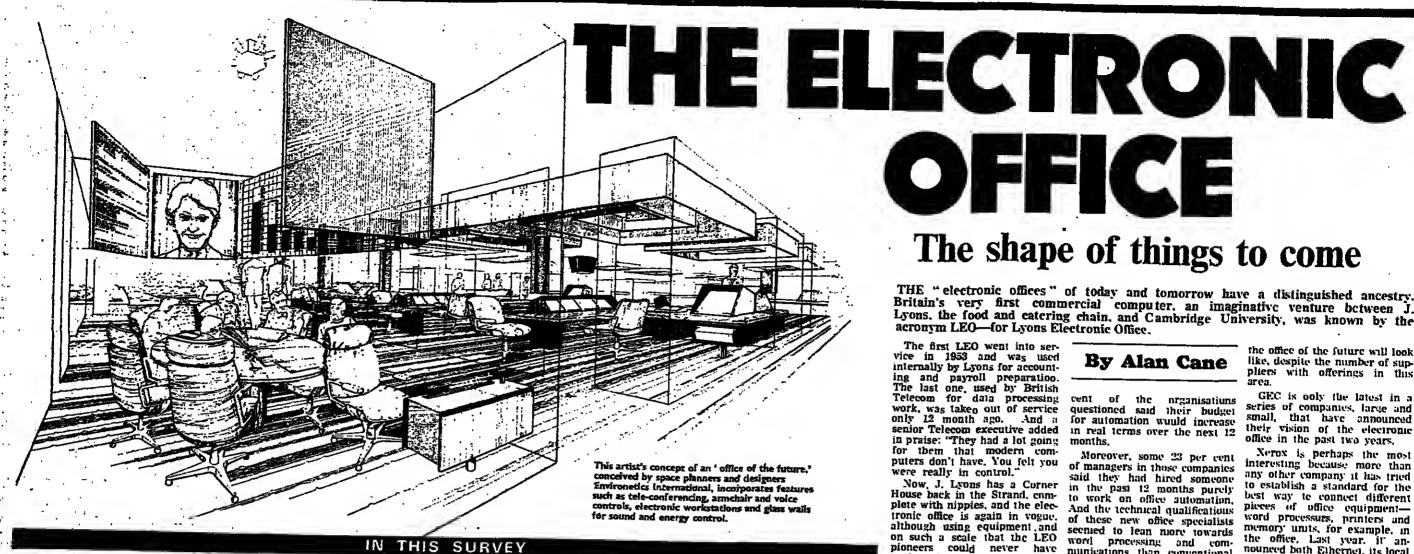
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FINANCIAL TIMES SURVEY

Tuesday April 13 1982



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The shape of things to come

OFFICE

THE "electronic offices" of today and tomorrow have a distinguished ancestry. Britain's very first commercial computer, an imaginative venture between J. Lyons, the food and catering chain, and Cambridge University, was known by the acronym LEO-for Lyons Electronic Office.

The first LEO went into service in 1953 and was used internally by Lyons for accounting and payroll preparatioo.
The last one, used by British
Telecom for data processing
work, was taken out of service only 12 month ago. And a senior Telecom executive added in praise: "They had a lot going for them that modern puters don't have. You felt you were really in control."

Now, J. Lyons has a Corner House back in the Strand, com-plete with nippies, and the electronic office is again in vogue. although using equipment and on such a scale that the LEO

LEO was a data processing computer-it was described as an electrooic office hecause the work it did used to be carried out in offices before financial and political constraints banished the computer to its own ivery tower, the computer control of the computer control of the computer control of the computer control of the ceotre, complete with its own attendants, the data processing department

The present enthusiasm for electronic office systems is simply the latest stage in the gradual redistribution of computing power out from the computing centre to the operating divisions of an

Frenetic enthusiasm? To be honest, most of the enthusiasm is to be found among manuof line managers looking after
facturers and suppliers, while
their customers watch caresing. mail services, telecomfully, but in the main, refuse to commit themselves.

Nevertheless, the pace is quickening. In a study of Office Automation in the UK. undertaken by the consultancy difficult to predict exactly what lechnology.

Urwick Nexos, some 67 per

By Alan Cane

questioned said their budget for automation would increase in real terms over the next 12

Moreover, some 23 per cent of managers in those companies said they had hired someone in the past t2 months purely to work on office automation, And the technical qualifications of these new office specialists seemed to lean more towards a scale that the LEO word processing and com-could never have munications than conventional data processing.

The coming of office automa-tiun seems, io fact, to be creating a new kind of office hierarchy. There is a growing traditionally distinct office services. With the coming of word processing and electronic mail, for example, it becomes less easy to see a distinction between typewriting services, mail services and tele-

communications. The trend, first identified by Mr Rouald Yearsley of the BIS group, is to the establishment of a new corporate post, that of systems overlord with a number munications and printing report-

ing to him. What sort of systems will this new species of corporate animal have in his charge? It is very

the office of the future will look like, despite the number of suppliers with offerings in this

GEC is only the latest in a series of companies, large and small, that have announced their vision of the electronic

office in the past two years. Xerox is perhaps the most interesting because more than any other company it has tried to establish a standard for the best way to connect different pieces of office equipment word processurs, printers and memory units, for example, in the office, Last year, it an-nounced both Ethernel, its local area networkion product, and Star workstation, an advanced terminal for execu-

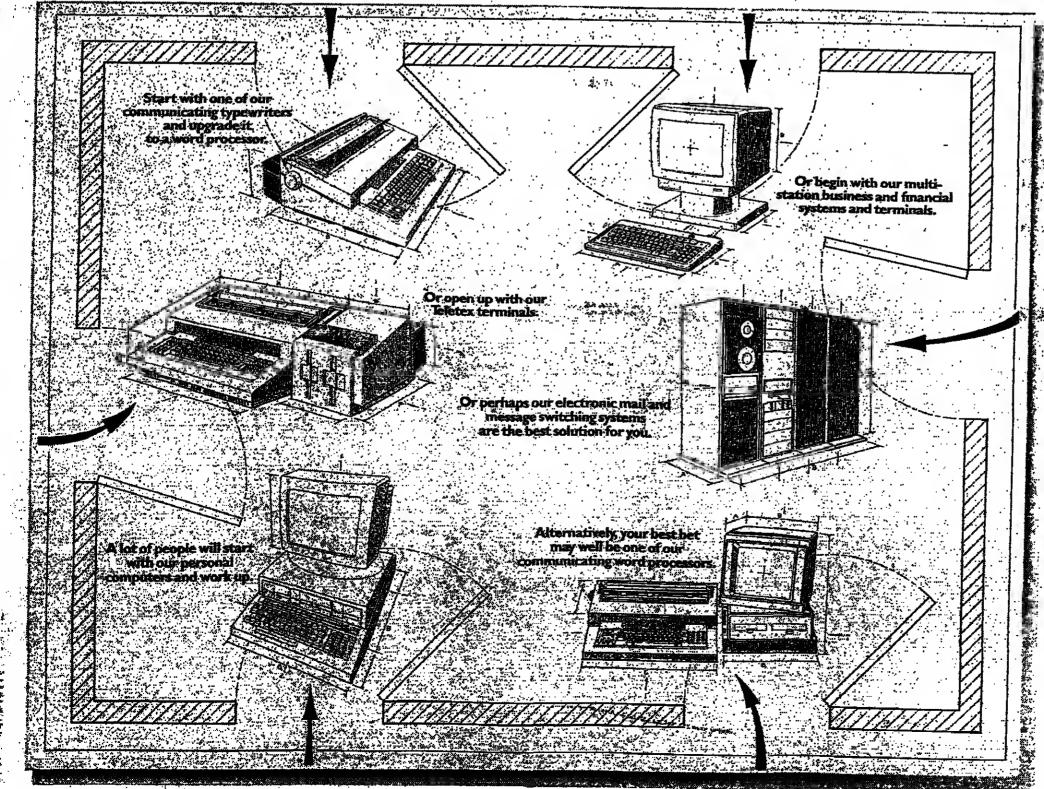
Nerox has been working on these products, and others that interface to them, for the past 10 years,

Waog, a U.S. cumpany which. through a mixture of sound clectronics and imagioative marketing has had dramatic success in word processing, launched new and advanced products which promise the fast and efficient distribution of text, image and voice.

Burroughs launched "Ofis 1." a collection of office products. Data General released new software and improved terminals for the office. Office Technology launched a system which enabled its eustomers to attach voice "notes" to typewritten text. ICL and Sinclair announced they would work together to produce a tiny telephone lerminal with a display based on Sinciair's flat screen

CONTINUED ON PAGE XX There are many ways into the electronic office. Choose a door. Any door. It doesn't matter where you start. We build our systems to work together. So begin with the one you need now.

by Philip Hunt.



So begin with the one you need now. Then add to it.

Piece by piece. Function by function. At Olivetti we don't believe in a rigid system. One that squeezes you into an office you can't use fully

We believe in letting your electronic office grow round you.

To fulfil your needs. Not our sales forecasts.

This is how we've been building office equipment for seventy years.

The first desk-top computer was an Olivetti.

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When the right mix is important

All sizes of computer will have a role to play in the office of the future

In this office information system, the Burroughs OFIS-1, the components are engineered to fit the individual needs of managerial and clerical departments

The above office information system,

OFIS-file on-line electronic file/retrieval system. Workstation multi-purpose terminal. Desktop printer.
Word processor.
Shared printer with sheet feeder.

Word processors. OFIS-terminal executive inquiry/display station. OFIS-reader page input station. OFIS-director communications/ control processor. Dex' facsimile station.

IT IS unlikely that any office of with the shrinking size of com- which require medium sized the future can avoid using the nuting systems but increased computers for routine office computer in whatever guise, in

some aspect of its operations. The British Government's Information Technology 82 Committee cites the importance of computers in its description office automation which is the use of computers, microelectronics and telecommunica-tions to belp us store, obtain and send information in the form of pictures, words and numbers more reliably, quickly and economically."

When computers were moved into offices in the 1960s, companies opted for large and fast systems because to justify the cost of such computers they had to be used for processing information in large quantities as quickly as possible.
This precluded their use in

all but the largest organisa-tions. Since then the development of minicomputers and microcomputers has given offices relatively low cost but ools which can sit on an office and calculations. desk, rather than have to be enclosed in air-conditioned

As Alan Cane points out in the introduction to this survey. one of the first applications of the computer in the office was developed by Lyons, the com-pany fondly remembered for its corner teashops around London. Lyons produced its "Leo" (for Lyons Electronic Office) computer system in the first half of the 1950s. This was used to take in daily orders from the teashops to provide better stock control of food and speed up delivery services.

Since the beginning of the 1970s, there has been a trend away from large computers like Leo in favour of distributed systems which put more compuling power in the band of the user at bis desk rather than concentrated through a central

There is a debate at the lt is likely that the large moment cu whether it is the mainframe computers will have computer or the electronic a new role in managing computer or the electronic telephone exchange which will works. For many years, some be the heart of the electronic industry observers felt that panies argue that it will be the exchange which is the core hecause it provides the link between equipment, while computer companies say the computing systems. puter is the central wait because il will co-ordinale the activities of the electronic office.

On the other hand, some companies believe that neither the exchange or the main computer is necessary and bits of electronic equipment can be connected together by a local area network.

Aid for managers

This means that managers can have small personal com-puters sitting on their desks to extremely powerful computer help them wilb their planning and calculations. When they want to transmit the results of their work to someone else they simply send it down the network which connects all olber small computers and office equipment together.

Companies such as Xerox has opted for this network approach while Xionics a small successful British company has chosen a computer controlled network.

In its approach to the clee illustrates that its possible to combine approaches. Tradi-tionally a company which bas produced larger office com-puters, it now also offers small computers for managers' desks and word processors plus a host of networkable office pro-ducts including voice and text

handing equipment.

For example, large companies
may have engineering laboratories where it needs a small computer terminal capable of The cost of providing such power has fallen with the decreasing cost of microelectronics large mainframe computers are which has also been coupled employed, and regional offices

really large computer systems would become obsolete in all but research and defence applications because of the growth of the powerful small com-

Developments at IBM tend back up the concept that these large systems still bave growth potential. Last year, IBM announced a computer based system designed 10 record, store and fnrward vocal messages which could have an influence on the development of lectronic office systems.

IBM's system turns the human voice into binary digits. the language of computers, and records them on magnetic memory disc.
It has been possible for some

time to store and forward data messages through data and messages systems, but volce storage requires much more complicated and more powerful computing systems to handle it. Eventually, this could lead to a device which could allow the

user to dictate into a microphone and obtain an instantaneous typed transcription. George Orwell in his book

Integration of Functions REMOTE COMPUTING TERMINALS DATABASE TYPEWRITERS DICTATION COUPMEN CALCULATORS

WORD PROCESSING

1984" called it Speakwrite, IBM researchers have already achieved some success in this field but have to use a very large computer indeed any accuracy transcription.

In conclusion, then it must be assumed that all sizes of computers will have a role in

the office of the future whether it sits on a desk to provide personal files, message storage or diaries, controls the flow of information through the office or handles and manipulates large amounts for information for payrolls and accounts.

Elaine William

Fears that the machines might cut down jobs have now gone

Word processors break down the barriers

came onto the market, secretaries and typists tended to regard the machines in the way the Luddites regarded the steam engine — as a major threat to their livelihood.

However, the fears of mass founded. Word processors are rapidly gaining acceptance as a

renetitive tasks. In fact word processors are

These systems, which are in essence, sophisticated electronic typewriters, are generally con-sidered to be the route along which companies will make the transition to the complete electronic office, thus reducing the amount of paners shuffled within companies' walls.

There are more than 100 different models of word proces-sors on the market. This figure excludes the software nackages sold by committee commanies which onships microcomputare, and larger committee systems, In have the extra facility of word processing.

Wide range

Those commeting in the market range from office enginment pecialists such as Lanier Diclanhone and Rank Xerox to electronic equipment companies such as AES. Wordnlex and AM Jacouard and software and comnuter companies such as ICL, Logica. Wane and large multi-nationals such as IBM, and

Though the market is domi-nated by U.S. companies — lo 1081 they accounted for shoul 80 ner cent of sales - British companies seem to have fared hetter than most European manufacturers he estoine a orester hold in this comnetities

So far, the TIK comognies such as Logica have been able to match and even achieve superimity in terms of technical specification and low cost then some U.S. companies.

Because of the problems of turning the Jananese language into dieital signals for disolaring on a television screen. Japan has not made great incoads into the word processing market vet. is too large for the Japanese to be deterred by such a barrier. and they are likely to be a formidable force in future.

When word processors first introduced to the market. there were fears that they would cause large-scale inemployment in the office because of the greater productivity mannfacturers claimed for their goods. Experience bas shown that this is not necessarily the case. Such systems come into their

own in that the skills of secretarles and typists can be used more productively, containing the rising costs of preparing reports and business correspondence Savings in time and costs can

be significant since many lengthy documents bave to struggle through several stages of alteration, correction and retyping before they are ready for distribution.

Word processors really come into their own where a large

WHEN WORD processors first number of similar letters or reports are produced. Computer type memory storage facilities available on many machines mean that hundreds of personalised letters can be produced at very high speed.

Such equipment can either be unemployment through office used singly as a direct replace-automation has been largely un-ment for a conventional typement for a conventional type-writer or connected into a network to allow communications tool which can remove a con- between machines to provide siderable amount of office new services such as electronic drudgery by carrying out horing. mail and common information services.

The demand for communicatlikely to be one of the most ing word processors is likely to active areas within the electric increase as the cost of such units tronic office equipment market. fall. The growth of this with an average growth rate of concept is hampered by the fact more than 20 per cent a year that it is still difficult for one forecast over the next five years. manufacturer's word processor to talk to a rival machine.

> tied into a word processor nelwork, become particularly attractive to companies when office sites are already linked by leased telecommunications lines for vnice, message or data systems. Many large companies operate such systems. Out of office hours, when such expensive lines usually lie idle, they could be used to transmit intra-company mail at little extra cost and

save on conventional mail bills between offices.

Many office couldment comnanies believe the way to attract companies towards the complete electronic office will come from attacking the market at the bottom end. This is by encouraging the low volume user into buying slightly more sophisti-

cated electronic lynewriters as

a first step towards full word processing. These machines usually have one line displays plus a measure of word storage in the form of solid state memory display. Frogressing furthar up markel are the so called thin window units which have improved displays showing several lines of text plus a larger word store usually

in the form of disc.

The full-screen based word processors are really intended for applications where a con-

layout revision is needed. from 24 to 69 lines of text. each line comprising between 80 and 96 characters with facilities for horizontal and vertical scrolling -moving the text up or down as in film credits or from side to

Over the past year or so prices of word processors have fallen dramatically. A full-screen hased machine now costs around £4,000 and manufacture is still dominated by the U.S.

Typing pools

Besides the stand-alooe word ocessors are the shared-logic systems. Essentially these are word processors which can operate individually but share a common memory computer sys Electronic mail systems, when tem. This is for use in such places as large typing pools where work needs to be delegated to Individual machines and progress monitored.

The cost of such a system prohibits their application in all but the largest organisations. For example, Wordpley has sold several of its smaller sbared logic systems to Marks and Spencer, London Electricity Board and several building At Marks and Spencer, the

system ia mainly conceroed with prenaring and up-dating specification projects and manuals for the company's computer department which prepares 15,000 pages of text a year. With so many companies in

the market and the recession affecting capital equipment expenditure, it seems likely that the downward price trend will continue. Some of the less competitive companies will drop out of the market through sheer weight of competitive numbers.

A number of users tend lo rent machines rather than buy outright, simply because they are not sure if they have chosen the right machine or that It will fit into the present or fumre planned office organisation.



The keyboard and display screen of the multi-function Wanguriter word-processing system (above) are moveable and the printer is quiet and compact. The Wangwriter's document-handling capability has been extended from 15 to 75 pages



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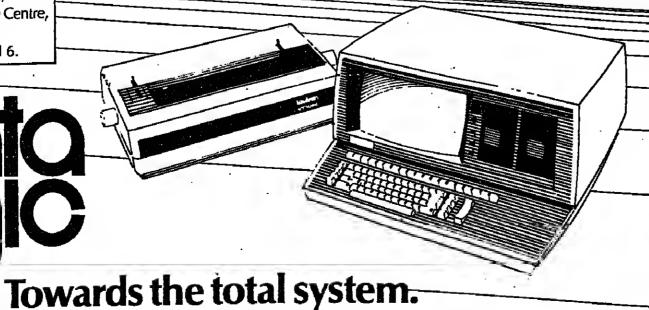
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Guy de Jonquieres looks at the revolution in business communications

Era of profound change now under way

FOR MOST of this century, FOR MOST of this century, the Post As a result, digital exchanges roofs or in company car parks.

FOR MOST of this century, the Post As a result, digital exchanges roofs or in company car parks.

A major appeal of satellites form of long-distance community to transform itself into a and versatile offering facilities is that they allow digital content of the post of the post of the parks. cation for business and residential subscribers alike. In most parts of the world, telephone communications have to shake off its previous image been provided by monolithic been provided by monolithic as a slow-moving public ultility organisations, enjoying total or by marketing more aggressively virtual menopoly powers, whose principal objective has been to new types of service. offer a uniform standard of

basic service to as large a proportion of the population as

This state of affairs is starting to change rapidly. Spurred by the growth of computer networks, demand for data communications is now outstripping the increase of "plain old tele-phone service." And the structure of the telecommunications industry is itself undergoing a entrenched empires are con-fronted by new competition. Fnr example:

• In the U.S., American Tele-phone and Telegraph reached the Justice Department earlier this year requiring it to dispose of its 22 local telephone operating affiliates. This means that AT and T will have to compete on more nearly equal terms with the smaller companies which have been chipping away at its long-distance business

over the past decade.

In exchange, AT and T has been freed of previous restrictions nn its entry into the booming market for "enhanced" or "value added" services, which combine communications and data processing. Many industry experts foresee a battle for this market between AT and T and giants like IBM

and Xerox. "Value added" services are those in which the original-message transmitted is in some way changed. Examples include computer networking, electronic mail or electronic banking.

OIn Britain, the Government's liberalisation policy has re-moved British Telecom's monopoly over the supply of subscriber equipment and communications services. British Telecom must now compete with private sector rivals in these fields. A consortium headed by Cable and Wireless has been licensed to build and operate an independent national communicatings system designed to serve

more commercial organisation. Though its monopoly remains intact, the Bundespost is seeking fication. By means of sophisticions. All that needs to be done

What are the reasons for these changes?

First, in most industrialised countries basic telephone ser-vice is now available to the vast majority of the population. The industry's focus is starting to shift away from extending the public network to expanding the range of facilities which are available on it.

Second, telecommunications technology is undergoing a pro-found transformation, which is facilitating the introduction of many new versatile and inexpensive services. At the heart of this minor revolution lies the confinence of telecom-munications and computers around digital technology.

Technology

Until now, telephone systems have used analogue technology. The sound waves created by speech are transmitted as varying frequencles which cor-respond to changes in the pitch of the speaker's volce. When computers are linked to a telephone line, the binary code which they use must be translated into analogue form by means of a converter known as a modem.

The new generation of digital communications systems is designed to transmit all information as a series of zeroes and ones, outwardly indistinguishable from computer lan-guage. Speech is "sampled" at rapid intervals; and the change in voice frequency is coded in digital form and transmitted down the line to the receiving end, where the same process is carried out in reverse to reconstruct the speaker's voice. No conversion is needed to

communicate computer data. The exchange equipment which handles digital communications is very different from analogue switching and transmission equipment. The latest exchanges are in reality specially-designed computers. in which electro-mechanical

like automatic call-back, conference calls and caller identicated electronics, many of the same facilities can also be built into subscriber terminals.

It is not only exchanges which are changing. Transmission systems are also being transformed by the introduction of satellite communications and optical fibres, hair-thin flexible strands made of the purest glass which carry signals in the form of pulses of light. Both are competing to replace copper cable as the standard method of transmitting telecommunica-

ontical fibres have considerable advantages over copper. They can transmit vast amounts of digital information over long distance at very high speeds, with a far smaller loss of signal strength. Satellite communications are bounced off spacecraft orbiting some 20,000 miles above the earth; in optical fibre systems, the signal needs to be boosted by repeaters spaced every 5-10 miles apart, compared with spacing of no more than a mile required by most copper by most copper

larce capacity offered by both of the newer technologies can be used in a variety of ways. For example, large volumes of computer data can be sent from one point to another at very high speed, a facility which makes them an Ideal medium for transmitting live videoconferences.

circuits.

Alternatively, many different telephone circuits can be carried on the same channel simultaneously. One strand of optical fibre can carry some 2,000 telephone calls, against a maximum of 32 on a pair of copper wires.

One of the leading practitioners of satellite communications is Satellite Business Systems (SBS), an American company owned by IBM, Comsat and the Aetna insurance

SBS provides an advanced private communications service for large companies with operations scattered across the U.S. Customers, who are charged a minimum of \$100,000 a year, devices are replaced by micro-transmit and receive via earth stations mounted on their office

connections to be set up almost immediately between any locais to install suitable earth

stations. One of SBS' major customers is Boeing, which uses the service to enable its engineers to tap from anywhere in the U.S. its vast computerised data bases. So great is the transmission capacity available that the entire contents of Encyclopaedia Britannica could be beamed from one side of the U.S. to the other in a matter of

But satellite communications is quite expensive—SBS has attracted only about two dozen customers since it began operating in early 1981 and has yet to show a profit.

Satellite costs are also disproportionatety high over short distances. The economics of using satellites for communications within European countries are far less attractive than in a country with the land mass nf the U.S.. In the longer-run. from optical fibre systems.

now starting to instal optical fibre systems in place of copper on trunk routes. The higgest network in the world at present is planned by the Canadian province of Saskatchewan: it will be some 2,000 miles long.

British Telecom has announced plans to build some 300 miles of optical fibre routes within the next few years. And the Mercury consortium, headed by Cable and Wireless, pro-poses to build a 700-mile optical fibre loop connecting English cities.

Several trials are being conducted into the use of optical fibres in local communications networks. British Telecom is wiring up a number of private houses in Milton Keynes. France plans to link 5,000 households in Biarritz. And the Bundespost is considering a much grander plan to rewire West Germany's entire telephone system with optical fibres at a cost of about DM 60bn over the next 30 years.

Apart from the physical effort nf the U.S.. In the longer-run, of laying new cable, the main optical fibre systems. But it many industry experts believe, they will face tough competition cost. At present, it costs about types of transmission will

Many Western countries are should fall sharply as volume production begins. But optical fibres have many advantages: in spite of their large transmission capacity they are much more compact than copper, require fewer repeaters and are immune to electrical inter-

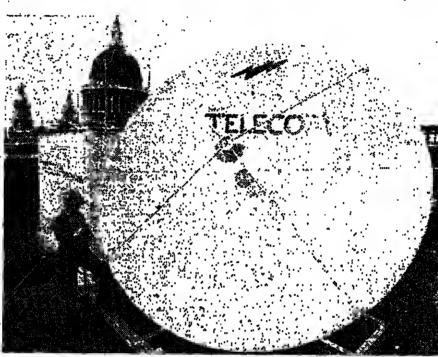
> A number of countries are developing both optical fibre and satellite communications. British Telecom plans to launch a satellite business service in conjunction with other Europcan authorities in 1984.

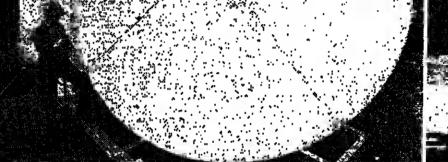
The Financial Times recently carried out a trial of the planned service to relay print-ing instructions for its international edition from London to Frankfurt. If satellites prove economically attractive, the FT may use-them instead of the and Frankfurt at present.

Most European telecommunications administrations see satethtes as only a sinp-gap terrestrial networks with digital exchange equipment and £2,000 per mile, though this coexist for some years.



Miles of pure spun glass will soon circle the earth to make a web of communications as optical fibre cables take over from the conventional metallic conductor cobles which now make up the network. Telephone cables are the largest single expense in the UK telephone system and scientists have been exploring new and cheaper ways of sending messages. The answer, they feel, lies in ontrol tibres. Above: technician Jan Harrison (left) holds the new optical fibre cable while, in contrast, willwright Fred Johnson halds the old-style cable





The Financial Times recently carried out a trial satellite relay of printing instructions for its international edition, from London to

Frankfurt. Right: A huge relay station: at White Sands, New Mexic o. built by Harris Corp. for Western Union, uses half its capacity to communicate with the Space Shuttle and various satellites

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Diamond House, 138-140 South Street, Just pin this coupon to your latterfeed and we will do the rest. Telephone: Darking (0306) 887777 Harrogate (0423) 509738 Birmingham (021) 4558581 Capacity of storage systems rising

come a long way since it an two.

started in the early 1960s, two.

The small business computer have Paper tape, magnetic tape and punched cards were all that was available so that storage and retrieval of data was painfully slow by modern standards.

Today, big reel-to-reel tape machine are mainly used as longer term "dumps" and paper tape is hard to find. For immediate access bulk storage. most systems use one of a variety of disc stores (on which many millions of development money have been spent), drum cartridge devices, magnetic cards or bubble memories. Microfilm is in wide use for longer term storage and there are some sophisticated systems on the horizon employing the

Just as the pick-up arm on a gramophone turntable can be placed to play any music band, so the read/write head on a disc store can locate any one of about 100 concentric tracks magnetically recorded on the flat metal oxide surface. There words (bytes) on each track

At the top end of the disc spectrum is the fixed head type, which has an array of fixed read/write heads—one for each track — making it expensive and unlikely to be found in any but large office complexes. The average time to find a record is about one hundredth of a second. Extraordinary amount of data—a billion bytes or so can be held on multi-platter dual spindle machines.

Less expensive is the moving head type. A single head is moved rapidly across the disc radius using a high speed solemoid. More data can be accommodated but access is about five times longer than

and word processor have spurred efforts to design lower cost but fast and reasonably robust disc systems. The answer, once again from IBM, came in the early 1970s and was the so-called "floppy" disc. Many other companies have since manufactured it.

The oxide-coated disc is made of thin tough plastic and is held in an eight inch square envelope from which it is never removed: the disc rotates inside it and the head moves

over a radial slot.
The mechanics were hard to believe when the technology first appeared, but drive lives of five years are normal. The access time of floppies is about 0.5 secood and about 250,000 bytes can be stored on one side.

Mini-floppies

Mini-floppies (the discs are about five inches across instead of seven) have also appeared offering about half the capacity and are proving extremely suitable for microcomputers. Such "micro" configurations can give performances that would have needed a minicomputer a few

The most important recent development has been a disc technology that IBM called "Winchester" during development- a mere early code name which has stuck. Its secret is the minute space (about 20 millionths of an inch) between head and permanently fixed

The closer the spacing in disc working the more precisely can the tiny magnetic areas on the surface be recorded and sensed. However, the slightest speck of the fixed head type. Moving dust can he fatal and the

BULK STORAGE of the user's head systems can have fixed system has to be totally in the form of the Philips card about the size of a credit data in computer systems has discs, removable discs in cart-come a long way since it all ridges, or a combination of the puter companies and many drives and cartridges from 3M particles in the surface layers, started in the early 1960s. two. chester. Burroughs for exampla employed in lower cosl systems has a 14 inch drive offering up as an alternative to disc, but to 80 megabytes.

Frequently there are two double-sided eight inch discs. One surface is used for head positioning and the other three for data. The result is where loss of data could be 10 megabytes capacity, equiva-serious. The established method lent to perhaps 50,000 names

megabytes capacity. An example of a recent introduction, however, is a unit from Rotating Memory Systems that can have from one to four discs with up to 18 megabytes capacity.

IBM in particular offers magnetic cards, a column and row magnetic recording system used in their small business

Rubble memories made their debut In 1978 and heralded as the new bulk storage. They consist of a large number of rows of extremely small magnetised areas on a small sheet. Access is row-sequential rather than random but the worst access delay is about one second. With no moving parts or worries about contamination the idea seemed attractive for robust

bulk storage. But Rockwell, Texas Instruments and National Semiconductor have all pulled out leaving Intel and Motorola in the U.S. Basically the problem that sales are not adequate while other costs mount. IBM has them but does not use them and Fujitsu and Hitachi

are both ready. computers and word processors

access is rather slow at 10 seconds or so.

"Streamer" tape drives are becoming popular to back up fixed discs like the Winchester. of starting and stapping tape and addresses in a business for block recording is done system.

There is also a "minni-winny" (miniature Winchester) using five inch discs with about six in/sec. Up to 61 megabytes can be held on a recently announced Thorn-EMI unit.

Laser systems

There are other systems that are only just coming out of the development stage. For example, laser can be employed to make microscopic pits in a plastic surface, either in groove form on a gramophnne-like disc,

or in rows on a card. Sony and Philips have laser systems for recording and playing back digital video and sound on a spiral-grooved disc. JVC also uses digital bits, but plays them back by detecting micro-scopic changes in electrical capacitance as an electrode runs over them.

Storage capacity is very high. The Sony 44 inch disc can hold five billion bits (about 120m words) and read them out at 4.3 megabits per second. Immediate objectives are in the audio/IV entertainment markets, but these discs can also hold computer data. They " read-only are of course, data once systems — the recorded cannot be altered.

Falling into a similar cate-The other major magnetic gory is the Drexler Laser Card, system, tape, is applied in office about to go into production in the U.S. This uses a plastic

A fine laser beam burns black holes about five microns (millionths of a metre) across clearly distinguishable by the reading head from the otherwise highly reflective background. Recording rates are 10 megabits/sec and the card can hold up to a million words

of text. This system is also read-only. However. and A. B. Dick have similar systems of recording, but with the merit that the impression can be erased and the resulting

space re-recorded. For bulk storage where one of very many pages of text needs to be retrieved and displayed to a number of offices, development from Antone Systems of Bournemouth uses

Its CRT display terminals which might be employed for other purposes as well) show pages from a special microfilm store than can hold 4m frames, An indexing system, activated from the display and keyboard. causes the desired film frame to be scanned with a high definition line camera (2,000 lines) to give a picture within 10

The frame is held in the display unit'a electronic store for read-out on to the screen where it can be updated if necessary. re-photographed with the same kind of camera and the film put back into the

For the longer term storage office data, microfilm or microfiche (a sheet of about postcard size carrying many page frames) ought to be seriously considered for cost effectiveness, in spite of the upsurge

Geoffrey Charlish



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This new Olympia micro-computer is linked to a 132-character line dot matrix printer. The 64K RAM system, specially designed for small businesses, has the option of floppy disc and hard disc storage

Alan Cane discusses cost-effective methods

Better data retrieval a priority

General Robots, told a conference on data security back in 1979 that he could gain access

to virtually any data bank.
Nobody disagreed, but the
heart of the matter was quickly identified by another conference participant who observed: With time and money I could get in. Without time and with-out mnney, and if you changed could not get in."

The capacity to store vast amounts of information in elec-tronic form is crucial to the paperless office. But what is ability to retrieve any part of that information, at will, without taking substantial time or money, and in a form that is immediately useful to the

Technology is rapidly overcoming the problems of packing substantial amounts of dala development of the 64K ranaccess memory. industry standard memory chip, has meant that modern microcomputers have up to a megabyte of semiconductor store under their lidsroughly enough to store the full use in a system to give telephone text of 15 average novels.

The new miniature hard Winchester disks — "Mini-

store. And the large Winchesters offer many gigabytes (bil-lions of bytes) of storage in a

If the remarkable potential of these storage systems is to be made available in the office, suppliers must offer ways of getting information out quickly, accurately and cheaply.

GIVEN enough time and money, approaches. The first is obvious. Mr John McNulty, the irre-pressible managing director of memorandum stored has a memorandum stored has a name, and the user knows it. it is possible simply to key in that name to retrieve the document from its electronic pigeon hole.

The task

Information retrieval systems become interesting when the user either does not know the name of the document he or she wants to see, or has the name wrong, or simply wents to browse through a batch of documents covering a general

In their search for the most effective method to provide this facility, manufacturers have tried techniques based on hardthe physical components of the system and software—the lists of computer instrucwhich make the system tions

ICL developed a hardware based system called CAFS— Content Addressable File Store -which used clever indexing methods to speed the travel of a disc drive read/write head to the correct track on the disc. That technology found its first operators fast access to subscribers' telephone numbers.

Now Intel, the distinguished U.S. semiconductor company, has produced a microprocessor system which effectively manages the information stored in computer'a memory.

This "database processor" is unusual because the computer software which actually manages the data is written into

Ofisfile can locate any document or group of related documents " with nothing more than an instruction phrased in plain language and containing a name date, or other words in the sought-after text." Other companies make similar

There are a wide variety of pieces of software which will manage a database, but these

are usually provided in the form

of magnetic tape or a floppy magnetic disc, and the instruc-

Intel's hardware database processor sits between the com-

uter and its memory system.

It receives requests from the

passes the answer back to the

are not new; but the Intel de-vice brings database manage-

ment down in the level of the

microcomputer—and therefore to the level of the office system.

A similar but larger system

developed by Britton-Lee 15

Some systems mix hardwar

example, as part of its strategy for the electronic office launched

basically an intelligent filing cabinet. It can store 160m

characters, the equivalent of

80,000 A4 pages of text, on disc.

The device has only one con

According to Burrough

trol-the on/off switch.

device it cails Ofisfile. It is

suitable for larger systems.

computer goes about finding the

puter's main memory.

Such specialised

claims. Datapoint, one of the brighter companies specialising in distributed processing, has a system called AIM which the company ciaims, can retrieve individual words from a stored text. This is a software tech

Secret of the best system

SOFTWARE is the invisible heart of the electronic office. It is the secret of the best office system — and it can usually be blamed for the

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To Distinging

faults of the worst. As a product, software is perhaps even more visually nn. interesting that computers themselves. It is supplied as a reel of magnetic lape, a few thin plastic "floppy"

reference manuals and other documentation, these devices hold the essential instructions which make it possible for the computer to carry ont any useful work at all.

From the user's point of view, the technicalities need not be important: what is vital to understand is that software is difficult to write and, as a consequence, expensive. Considerable skills are needed to write software that is efficient and correct.

As Mr Dennis Jarrett put it in his book The Electronic Office (Gower/Philips Busi-ness Systems): All com-puters need software and electronic office systems are no exception: in fact, they need rather complicated software. But good software people are scarce and there are not enough being trained."

He goes on to point out : "It's not a question of entry level, first job programmers. The need is for software maestros with skill and experience. They are expensive."

There are some solutions to the problem. One is the develop- Programming is still a job for ment of packages, generalised the professional; the pieces of software which can machine or particular series of machines and which carry out a specific application. The

considerable cost of develop. The microcomputer itself is ment is then split between a

number of users.

Some of these packages designed for office and business use can be remarkably successful. An example is Visicale, a financial modelling package.

It runs on the Apple II microcomputer (and now many others) and, indeed, is thought disks, perhaps a bandful of plastic-cased semiconductor memory chips.

Together with a stack of Some 15 months ago, Intelligible of the principal to be one of the principal reasons for the success of that machine.

gence (UK), a British software bouse, wrote Micromodeller, which also runs on the Apple and which is claimed to enable the technologically illiterate to carry out their own sophisticated computer modelling. It has also sold well — now there is a whole string of Visicalc look alikes on the market. Then there is the software fac-

tory, the notion that just as robots can build other robots. so computers can be programmed to write proammes for other computers. At its simplest this means the elegant programming tools now available to help pro-grammer productivity.

true "programming machine" remains to be built, however. There are a number of packages on the market which claim to make it easy for the businessman to write his own programmes using simple English and some of these general computer code from simple instructions quite effectively. But beware the slogan "No previous experience required."

enthusiastic amateur will have to be prepared to mortgage his or her time, social life and possibly marriaga to write useable programmes.

partly to blame. In the days when computing

power was only available in the form of the large mainframe, software specialists Mr Naughton points out: "By developed ways of producing systems software effectively and made it possible to run applications software sensibly (systems software are. the instructions which run the computer: application software carries out specific

tasks for the user).
The advent of the microcomputer turned this on its bead.
Limited in power, it was difficult to write effective systems software to run them with a corresponding decline in the effectiveness of the applications software.

The impetus

Mr Edsger Dikstra, the Dutch software maestro, publicly proclaimed the coming of the micro as a disaster for pro-

gramming.
All of which may explain why. despite the fact that micro-processor based systems are the impetrs behind the new office automation, office watchers are seeing an increased role for the traditional mainframe in the office of the future.

Mr Michael Naughton of Langton Information Systems. chairman of the Computing Services Association software group, points out that the mainframe still bas the edge in cost effectiveness in tha

Mainframes are designed for pure throughput — number crunching — and many of the facilities expected in advanced office systems — the hand-ling of text and graphics for example, require considerable processing power.

They also require massive

reserves of memory, and if the cost of memory is falling rapidly in the micro and mini computer areas, it is falling stupendously on mainframes.

the time you have established a local area network, set np your contention procedures and organised effective data retrieval, you've done an amateur job in constructing a mainframe yourself."

Furthermore, many companies both in Europe and the U.S. are establishing videotex systems (systems which use a television set to display information transmitted down telephone .lines) to disseminate information among their executives.

As the number of terminals served by any system in-creases, the power of a mainframe is increasingly required to drive the system.

Mr Naughton helieves that local area networking — the con-

cept of linking small office machines together cheaply so that data can be passed rapidly and accurately between them
—will be dominated by mainframes. This would argue in favour of

an IBM approach where the mainframe is still the bub of the system and against the Xerox Ethernet concept where there is no overall system controller. There is no reason, of course,

why a main/rame computer should not be attached to an Ethernet system. With the continued growth of videotex, the idea of the soft-ware "gateway," the means for a videotex user to get access to a third party data-

base, is taking on fresh importance. The "gateway" works like this: A Prestel usar in the UK can gain access to the pages of

information beld on British

Telecom's Prestel computers

but to no other databank, With a software gateway it is possible for the user to interrogate any other database which is connected to the system

The best-known example comes from West Germany and in-volves a small bank Verbrancher Bank and the German videotex system, Bildschirmtext.

Customers of the Verbraucher Bank are able to bank at home using Bildschirmtext and a gateway which enables them to get access to Verbraucher Bank's main computer files. There are clear problems o security and quality not to mention response time in gateways systems. How should an organisation like a bank allow customers access to its files? The Verbraucher Bank system is well protected by layers of passwords and access protocols, but that will not satisfy all organisa-

Langton Information Systems has written a piece of soft-ware called preview which transfers information from the files of a mainframe com-puter to a viewdata system and formats it ready for view-

The idea of a methodology for ning to take hold now in just the same way that a methodology for data proces sing made sense of chaos in the early days of computing. cording ccording to Mr Nigel Harrison of System Concepts, a new consultancy set up to specialisa in office systems methodology: "The use of technology should only be considered when all other components of the office system bave been identified." other words, even the smartest software will not bring about a more effactive

office if it is applied to the

wrong problems.

A system should improve with age.

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tributed function to a whole network of systerns handling sophisticated DDP applications. And word processing. For complete affice automation in all your distributed locations. And you can add all of these capabilities at your place of business without interrupting your work flow. Quickly. Efficiently. Economically.

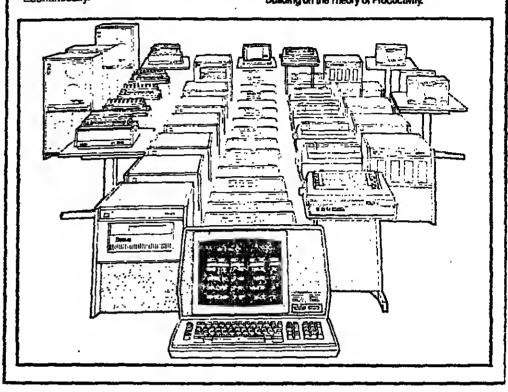
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Satellite being launched by Philips business equipment division, is a low-cost text entry system for the P5000 range of word processors. It has the full range of word processor editing functions and an interface which allows communication to the main word processor as pictured above. As at least 75-80% of an operator's time is spent inputting text, the machines are frequently not used to their full capacity. Satellite allows multiple access to a P5000 word processing installation and thus greatly increases the machine's productivity

Improving data retrieval

CONTINUED FROM PREVIOUS PAGE

sophisticated retrieval systems are secretive about the details of bow it is done. Datapoint describes its indexing method as a hologram of the material in the document. Burroughs says Ofisfile is based on two techniques; a way of eliminating redundancy from the stored text and a retrieval system based on the syntactical rules of English.

It is necessary to make a clear distinction between systems such as CAFS, AIM and Ofisfile, which are simply ways of getting quickly to where particular pieces of data are stored in a databank, and database management systems such as the Intel database processor and a whole host of proprietary database management products which make it possible to rearrange existing stored data for a whole variety of new purposes.

Mr James Martin, one of the most lucid of computer educa-tionalists says a database management system is: "Like a conjurer pulling different coloured handkerchiefs out of a hat. It derives its users make believe records from its store of data. It finds out what physical records contain the data in a given request, has a means of locating those records, and from them, derives the logical records that were asked for."

The U.S. software house a range of software products based around Martin's ideas. which make it possible for an organisation to build a relational dantabase; a database where many users can have many different views of the

ADR markets Data Designer software package developed by James Martin which is used in conjunction with a data dictionary to create a relational database. Data Designer is a modelling tool; data dictionary of which there are a number of proprietary examples—is a piece of software which lists all the data items that are used. definitions, how and where they are used and who is responsible for them. MSP offers Design Manager a package with much the same

The growth of the market in databàse management products is remarkable—probably more than 25 per cent a year, Logica, a UK based software and sys. tems bouse with a good reputation in communications, deve-loped a relational database pack-age called Rapport. Now the market for a good software package in the computing field is a little like the market for a new pill in pharmacenticals—it can make a company's reputa-tion and fortune. Rapport is proving just such a package for Logica. In its first 18 months

and continues to sell well, Rapport is used at more than 70 sites by organisations such Applied Data Research markets as BP, ICI, Unilever and British Gas. The latter is using the years systems should be avail-package to control and plan able which will be incompar-financial dasling on the sterling ably better than today's exand dollar markets. British Gas

it turned over more than \$1m

simple interactive query lang-uage. They are able to call up information on banks, brokers, portfolios, exchange rates, nego-tiabla instruments and trans-

Scrapbook," designed and developed by the National Physical Laboratory but turned into a product and marketed by the software housa Triad Computing Systems is not a fashionable relational database system—it was put together back in 1973—but it does pro-vide its users with facilities for accessing, updating and linking

Its users include the National Water Council, which uses it to generate and edit text for many of its publications.

Scrapbook is in some ways the archetypal software retrieval system for the electronic office. It stores and retrieves office information, processes text and makes possible electronic mail. And it has been around for a long time and runs on well proven equipment— usually the DEC PDP-11 range or CTL 8000 series.

Triad describes Scrapbook as company viewdata system with better input and retrieval, better security, and better print-

The perfect database management and information retrieval system for the office has ye to be written, but within a few years systems should be availample. The pressure on manumoney market dealers are able facturers from sophisticated to make enquiries using a users will see to that.

Give it a sniff of a file and it'll track

Once you had to be Sherlock Holmes to locate a file in central filing.

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files related to the word or phrase used, in case they're relevant.

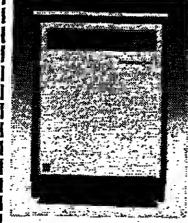
In all, it'll carry at least 80,000 files or, to put it another way, 50 filing cabinets.

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OFISfile from Burroughs. Part of OFIS1.

Trend towards more colour and graphic display

THE FIRST users of the matter of applying voltages to —as in television programme cathode ray tube (CRT) a pair of deflection coils to put credits—or changed a page at lisplay as a man/machine data interface were the military and it was not until the mid-1960s that screens became associated with commercial computers.

The appearance of small business machines, word processors and a variety of other office and industrial devices has driven the peripherals industry forwards with such velocity that there are now at least 200 companies offering terminals based on the CRT—although they are not all manufacturers in a world market that probably exceeds \$60p, according to market researchers Creative Studies International.

. It is set to grow at 30 per cent per annum and will he well over \$10hn by 1985, by which time there will have been a noticeable swing towards colour and graphics in business/office displays.

However, although developments in processors, storage and software techniques will prosoftware techniques will pro-ceed apace, driven largely by very large scale integration (VISI), display technology will continue to be based for the most part on the CRT.

The reason is not hard to find: the CRT, with its weight-less electron beam writing pen is still the most elegant, fierible way of producing an illuminated display. It produces the brightest characters on screen, can produce any colour and undergoes con-tinuous development to produce finer detail.

It is not entirely ideal though The ideal office display would be a lightweight flat panel, unaffected by ambient lighting, which could carry up to 6,000 characters or equivalent graphics—in colour, he instantly altered on screen and consume little or no power. the screen.

Apart from bulk, power consumption and the need for high voltages, the CRT still has the most to offer. Recently, the flat CRT has re-entered the limelight and commercial versions of Clive Sinclair's developments, with a side-mounted electron gun and a heam turned through 90 degrees before striking the phosphor screen, are awaited with some interest

Other contenders exist however, including plasma and electro - luminescent panels, liquid crystals and the light emitting diode. They all have drawbacks of one kind or ner of manipulation on the

office systems such as the lowend word processor. In general they need matrices of address wires to make each discrete element light up as required.

With the CRT it is simply a on the screen can be scrolled of the construction on the screen and any angle—the construction can even he "entered" Canadian Telidon.system is now can even he "entered" Canadian Telidon.system is now can be inverted to black on the inside. Or parts of it can be zoomed in for greater definition than Prestel, although can be zoomed in for greater white characters. The material can be scrolled from the inside. Or parts of it can be zoomed in for greater definition than Prestel, although responsible to the construction of t single- or two-line displays in in a solicitor's practice.

the spot on the tube face exactly where it is needed, at very high speed.

prove viable. The light beam, like the electron beam, has no inertia and can also be moved prevent the operator from about rapidly as required.
In the CRT displays can be

In the CRT displays can be produced either by scanning the tube face — as in a television picture raster — switching the picture raster - switching the

Using the keyboard, a cursor -usually a line under the Laser systems may eventually character—can be moved to any letter or numeral that has to be changed; some areas of the screen can be "protected" to



The Xerox 860. designed largely for secretarial and administrative use and available with either a full or partial page display screen. Previously available as a stand-alone information processor, the use of an Ethernet Interface Board makes it immediately compatible with the network

beam intensity as necessary to comparison of several fields of huild the image or the beam similarly formatted data. Such can he used like a pen in the manipulations are feasible in freely addressed mode, producing superior dot-free graphics. All of these techniques, par-The ultimate office display might well be able to do both,

Dot matrix scanning generally used to build alphanumeric characters. The letters and numbers are held in an electronic refresh memory computer digital code (ASCII) and on demand are converted by a digital-to-video converter into instructions for the electron

possibly on different parts of

. For a line of seven-tall by five-wide dot characters, seven horizontal sweeps are made, only the required dots being energised. Most screens have 24 lines of 80 characters each.

For the screen user all mananother, particularly when it tube face is possible to ease possible to construct whole engi-comes to addressable graphics the task at hand, from order neering fabrications such as at which the CRT excels. sintake entry in a factory. But they are being used in sales office to word processing

colour, although the cost goes

ticularly graphics manipulation. need memory in quantities which would have been unthinkable 10 years ago. But volume production and very large-scale integration (VLSI) continue to bring memory prices down; so that display systems will get cheaper in real terms. Some extraordinary display

achievements are taking place in science and engineering graphics systems such as comonter-aided design (CAD) and flight simulation. Doubtless some of these will find their way into business colour terminals, with dynamic graphics that by 1990 will make today's offerings look like child's play.

In CAD, for example, it is possible to construct whole engibridges and buildings on the made that make viewdata more screen and then observe them attractive for in-house business from any angle-the construc-

machining and other production schedules are automatic ally produced.

One company, Applican is offering Solids Modelling in which the customary wire frame line-only constructions can be transformed into full colour, three-dimensional models, with ahadow areas. Products can be seen more or less as they will appear after manufacture.

An advanced approach in graphics is bit-mapping in which the colour and brightness of each picture point (pixel) if held in a memory location in a semiconductor store, where i can be altered to suit some-grander plan. At Queen Mary College, for example, a team is working on display arrays which allows pages of informa-tion to be handled on screen rather like pages of actual paper on a desk top, but with colour changes, free updating, move-ment, and so on.

A recent announcement from Computer Pictures Corporation in the U.S. is of Trend Spotter. which combines full color graphics with comprehensive analytical facilities "so answer ing the decision-maker's need to be able to quickly assess facts in readily absorbable form. The system does not just display data in a sophisticated way—

data in a sophisticated waynumerical operations are performed so as to optimise it.
Users can create the charts
or graphs they want manually,
or the machine will directly
interface with the company's
corporate database on any make of mainframe through a special interface. The machine takes files from the mainframe and converts them to picture format After use they can go back to the hig computer in their original form or in picture

Having got text and graphics, there are systems available for sending them elsewhere over a phone line. Basically, these snatch a frame from the elseplay's video circuits, digitise it pixel by pixel and store # 1 Then it can be transmitted at any speed to suit the transmision medium. The Finnish company Salora has just anounced a system for general

application.

Viewdata, of course, allows alphanumerics and graphics to be sent over lines, but there is a speed limitation due to the low bandwidth of the telephone connection. The result is lumpy graphics and rather large alphanumerics.

But improvements are systems. For example, the Canadian Telidon system is now

New printing systems are versatile and noiseless

Advent of the laser beam printer

ALTHOUGH THE proponents seems to be to do away with paper altogether, they are probably whistling in the dark.
Not only will most of the

want "hard copy of important computer-derived text and figures, they will also want for their briefcases the graphics that the modern office system can produce.

Letters, even if they are sent by "electronic mail," will pre-sumably have a paper existence at the other end. The fact is that the VDU, for all its advantages, cannot be carried about in car, cab, plane or train. So for the foreseeable future,

perhaps indefinitely, marks with perhaps indefinitely, marks with be made on paper. The object with be to make them clearly, in colour if possible, quietly, at high speed and at minimum cost. As with any equipment, some of the attributes have to be traded off against others. The fast but noisy line printers of the computer room

are not suitable for the office and while the newer laser, and ink jet machines can be almost noiseless and very versatile indeed, their high through-put and cost rule them out in all but the very large-scale office complexes.

Daisywheel

For office use, two types, the dot matrix and the so called 'daisywheel" machines are the most favoured. With matrix at high speed as the paper printers, each character is commoves past. Tiny burn marks posed from a 7 x 5, 9 x 7 or are left that form characters, even a 24 x 12 dot matrix. The dots are made by the ends of thin rods, each actuated by a tiny solenoid in appropriate combinations to give alphabetic or numeric characters as the head moves across the paper. Obviously, the more dots there are the better formed the characters can be.

Nowadays such machines are under microprocessor onwhol. The head moves in either direction and skips over niques that would be perfect

hlank passages in the text to for the office, ink jet and laser, greater importance for bisiness-increase printing speeds up to are at the moment expensive men since so much more can be several hundred characters per for small users.

But for letters and reports the characters can look rather "computerised" because of the dot structure and the machines, although fairly fast, can be

The advent of small business computers and word processors spurred the search for a low cost, quiet, compact machine that would give typewriter

The result was the daisywheel type in which a solid fount (character set) is carried at the ends of radial webs round the full 360 degrees of the "daisy." The low mass plastics wheel can be rotated at high apeed to align each successive character with the print hammer. Founts are quickly changed by changing daisies. Output is indistinguishable from conventional typing and sometimes is

Many such machines bear the Qume or Diablo labels, although the Japanese have entered the market. Speeds are up to 60 characters/sec and prices in the £1,000 to £2,000 brackets.

To get away from the noise of impact altogether, other methods of marking paper have been developed. For example, if the paper is coated with a very thin aluminium layer, a group of electrostatically charged pins can be selectively discharged to the metal albeit still with the "computer-

Xerography can also be employed. On the market are machines with paper-wide beads yielding speeds up to 18,000 lines/min. Electrostatically charged character-shaped areas are impressed on the paper to which "toner" particles adhere and are heatfused to the surface.

Two quiet and versatile tech-

In ink jet printing, tiny drops of ink are electrostatically deflected to form characters on the paper as it passes. Canon in Japan has just aonounced that it is working on a system which thermally expels droplets of ink at precise moments from a licear array of 2,000 nozzles over the page width, allowing any kind of pattern to be made.

It may cut the cost of the technique.

Versatile

The taser heam, heing inertialess, can write very quickly with similar versatility. Hewlett Packard has just announced a machine for £100,000; although this is somewhat below the going rate, it is also not really on for the typical office. Graphics are assuming

men since so much more can be conveyed than by simple alpha-

So hardware providers are offering ways of capturing the colour graphics data from the screens of VDUa Several companies are offering printers that will capture a "screen-full" of information, store it and print

It is also possible to take the VDU's video signals and using a high definition monochrone cathode ray tube, display the three colour signal components in rapid succession to 2 Polaroid film camera via appropriate colour filters.

The result is an instantaneous picture of what is on the screen. of much greater clarity than that obtained by trying to photograph the screen direct. G.C.



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indexing letters and instructions, top

thumb-operated cusing system for

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thers at conferences - crystal

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microprocessor technology of the 225

will record both your own voice and

clear. You get a full hour's recording

together with all the most advanced

e your secretary has gone home.

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Keeping in touch by video-conferences

THE OLD adage that a picture is worth a thousand words is likely to prove as true in tomorrow's electronic office as it has been for traditional methods.

In the old adage that a picture hundreds of thousands of dollars routes, copper telephone circuits or viewdata as it is known in Britain — has excited considerable interest because of its ease of use and relatively low cost. Though initial honce of finding programme.

The old adage that a picture hundreds of thousands of dollars routes, copper telephone circuits or viewdata as it is known in Britain — has excited considerable interest because of its ease of use and relatively low cost. Though initial honce of finding programme. has been for traditional methods to look on travel as one of their of communicating information. most enjoyable business perks. And its validity will be all the

executives in different locations, face-to-face by means of tele- bandful of major cities. vision apparatus and audio equipment linked in a closed

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Video-conferences can be arranged between two in-dividuals, equipped with desktop terminals consisting of a small camera, a screen and a microphone-londspeaker. Or they can link groups of people seated in two or more specially designed conference rooms. As well as seeing each other, par-ticipants can also exhibit text and graphics on television moni-

Though video-conferences cost many times as much as a normal telephone call, they offer considerable economic and practi-cal advantages. Two executives on different sides of the world can talk directly almost at the press of a button, instead of having to spend hours in flight travelling to a meeting.

A number of larger companies particularly in the U.S., have started using video-conferences on a regular basis. One of them, the Atlantic Richfield oil group, says that it is now saving

The first commercial videogreater if the picture is a conference service was intro-moving one, which represents its subject in a life-like fashion. subject in a life-like fashion.

One of the recent techniques of minals. But the high cost integrated office systems is video-conferencing. This enables suspended. AT and T has since the provided and the provid launched another service, though separated by a few streets or by it is only available hetween thousands of miles, to converse special conference rooms in a

Costs cut

Video-conferences have been extremely expensive in the past because the capacity needed to carry them could only be obtained by using a large number of ordinary telephone channels. But the problem has been greatly simplified by the advent of newer technology in the form of direct satellite communica-tions and optical fibres, which carry signals in the form of light

The crucial element is some-thing called "bandwidth," the technical term for the range of frequencies which can be transmitted on a system, which is measured in units called herz. Television pletures in colour require a bandwidth of about 6m hetz, and the new generation of "high definition" television which will transmit pictures in much greater detail, will require twice as much.

Satellite and optical fibre transmission offers an abun-dance of bandwidth. But with the exception of major trunk

herz. In practice, it is difficult a large consumer market for to expand their bandwidth to videotex have been largely disthe dimensions required by colour television.

mitigate the bandwidth problem. and in the travel industry.

One system is known as " slowscan." Instead of being refor videotex's appeal. These are: freshed as much as 25 times per
It enables untrained person mal colour broadcast transmissions, a black-and-white picture is transmitted about once every

Another newer method consists, literally, of sending only parts of the picture. Instead of transmitting the complete image each time, the system "samples" it regularly and then sends only those elements which change between samplings. This technique sharply reduces the required bandwidth by as much as three quarters.
For the foreseeable future,

however, live communication of moving pictures is likely to remain a premium service. A considerably larger market is likely to develop in the near-term for video systems which sages electronically between transmit static images of text and graphics.
In Western Europe videotex—

Though initial hopes of finding

appointed, it is starting to acquire a following among cer-Some techniques have, how tain types of business users, ever, been developed recently to notably in financial institutions

There are four main reasons second, as is the case with nor- nel to "talk" to a computer. By following step-by-step instructions on a display screen, an operator can retrieve "pages" five seconds, slowly enough to of information on a wide variety be squeezed down a telephone of subjects stored in a computerised data base.

• A simple and inexpensive terminal can be used. All that is needed is a television set equipped with a handful of special microchips and a keypad or keyboard.

The terminals can be linked to the central computer by ordinary switched telephone circuits or by leased line.

ments between bank accounts display screens.
(assuming of course, that the The Scicoo sy

At present, the largest single videotex service in operation remains British Telecom's Prestel, though its 12,500 subscriber had initially been hoped for. But more than 3,000 terminals are his responses, so that the in-also hinked in Britain to private structor can analyse the systems operated for the benegt of a specific group of users. One of the largest of these is Topic, the London Stock Exchange's share price information service for brokers.

Mnch has been made British Telecom of Prestel's colour graphics, including moving cartoons. A technique bas also been developed to enable Prestel to display photographs. But the picture is slow to build up on the screen and requires a considerable amount of data storage capacity to be built into the terminal. At present, this is a costly addition.

Recently, products have With suitable software (programming), videotex systems videotex with other electronic systems in a single unit. Both wide variety of communications and transaction functions. For puter systems house, have lannched systems which embrace videotex, videocassette recordifferent users or effect pay- ders, personal computers and The Scicoo system is designed

Using moving pictures, alpha-numeric displays and sound track, it takes the student through a learning programme and then interrogates him. He punches in answers, using a keypad, and if he makes errors the system can automatically replay terminals are far fewer than the relevant part of the programme. The computer records

Many of these features are also available on videodisc systems which have started to appear on the market in the past couple of years. Pictures and sound are recorded on a revolving disc which is "read" capacity to handle sophisticated by a laser or a special stylus. They permit swift programme selection and can be designed to halt until the neer provides the correct response to questions flashed up on a television

> General Motors is using videodiscs to inform its American dealers about new model launches. Instead of summoning them from all over the country it dispatches discs to showrooms all over the country. The dealers can them watch going through their paces.

The videodisc was developed been largely apathetic. But the hy laser. To be commercially

student's performance.

Video systems are being increasingly used in the area of internal company communications, as seen here at the City of London branch of Abbey Life Assurance

more sophisticated videodise systems could have widespread impact in another applicationthe storage of computer data.

Research is now being conducted into converting the electronic zeroes and ones which originally as a mass entertain-ment medium, though the initial to tiny "pits" embedded on the response among consumers has disc, which would be sconned

optical technology used in the viable, techniques must be to he reprogrammed casily by the user and to manufacture them to a very high standard of accuracy. But if these hurdles can be overcome, videodises could prove the hasis for storing vast quantities of information at very low cost.

Guy de Jonquieres

Growing market for PABX

THE ONCE humble private Systems, IIT Business Systems, telephone exchange is under-going a rapid metamorphosis. Harris, While a number of companies Telecommunications manustill have manual switchboards facturers in the U.S. and UK with plugs and sockets telecomanumications. __manufacturers broadly similar line that the modern PABX (private automodern PABX (private automodern PABX (private automodern PABX) is the most natural and cheapest way of basing the matic branch exchange) is set electronic office. In addition to handling voice traffic new integrated, automated electronic PABX's are being configured to office.

mechanical automatic exchange. There is a fast growing market in both Europe and the U.S. for systems and features.

In the U.S. there are more than 30 different companies offering PABX systems including Rolm, Northern Telecom, GTE, Stromberg-Carlson, ITT, Nippon Electric Company (NEC), Mitel Stemens, LM Ericsson and American Tele-phone and Telegraph itself.

com has a monopoly on the supply of all exchanges with the switchboard or a radio under 100 lines, which reprepager can be sounded by a sents 90 per cent of the market telex call from anywhere in the measured by units and approximately world. mately 50 per cent by value.

Until last year British Telecom only supplied exchanges with ancient electro-mechanical technology. It now offers three advanced computer controlled exchanges which are being coaxial cable needed for such rapidly installed. The first, the systems as Ethernet, Wangnet Monarch, was designed at its and the Cambridge ring.

own research laboratories at
Martlesbam Heath near Ipswich used increasingly for data and is made by Pleasey and GEC. It is an advanced digital exchange with between 24 and 120 extensions and up to 30

Telecom has recently placed an order for more worth £40m, split equally between GEC and Plessey. It brings the total value of orders to £120m for March of orders to £120m for Monarch which will be compatable with System X, the digital public exchanges gradually installed in the network.

£100m orders

British Telecom has a smaller exchange, the Herald, developed by TMC, a subsidiary of Philips the Dutch electrical company, which is manufactured by into digitally switched equip-Standard. Telephones and ment especially as there is no Cables, part of ITT. TMC will international standard. soon have delivered its 10,000th Over the next five years a Herald to British Telecom number of observers believe Orders for Herald to date are there will be a considerable

The third exchange is made by Mitel; a rapidly growing Canadian telecommunications company which is building a sizeable factory in Wales. An initial order for ESm of exchanges last year greatly upset the traditional suppliers (GEC, Plessey, STC and TMC). That order rose to £10m and characteristics of the companies That order rose to £10m and Mitel has just received a second

order for £15m_ Large PABXs of more than 100 lines are offered in the UK nature of the product will make by Plessey (based on a Rolm exchange), GEC (based on a Northern Telecom exchange), IBM, ITT-STC, Thorn Ericsson and Philips. In preparation for the liberalisation of the UK market for PABXs British Telecom is evaluating for the Department of Industry exchanges from Plessey Office

Systems, Philips

The modern PABX has more types in common with a computer its office automation strategy manual or even the electromechanical automatic arrangements. similar in approach to Rolm and Northern Telecom in North America. Plessey has developed with a growing number of a voice and data workstation which can be used for a host of functions including word processing, electronic mailbox and interconnection with local area networks via the telephone wires and the PABX.

ITT Business Systems has recently announced the linking of its PABX, the 4080, to a telex switch and a data switch through small "black boxes." It In Britain the choice is more means for example, that a telex limited. At present British Tele-message can be received on a viewdata terminal connected to

> Mitel, which is shortly to launch a powerful and large digital PABX, the SX-2000, points to the advantage of using conventional wiring compared with the expense of installing It says the system can become

used increasingly for data as it is needed without a heavy investment in extra wiring. Telephones can be replaced by voice and data terminals at the exchange lines.

With over 2,000 Monarch exchanges installed in the 15 and data terminal which can months since its launch British be used for electronic mail, speed dialling, electronic diary and directory.

One aspect of the rapid introduction of new technology is the shortening lifespan of PABXs. A product which once had a lifespan of around 20 years is now set to fall below 10 years. Another is the growing battle between digital and analogue exchanges. Although digital will eventually become the standard there is a strong argument of the control of the ment that while public net-works remain analogue there are fewer advantages in rushing

change in the structure of the

characteristics of the companies that can successfully compete

in the new market.
"In turn the changes in the certain changes in the functional definition of the competing products. Consequently a new set of competitors will emerge from among those com-panies currently identified most strongly with the data processing, office equipment and computer industries."

Jason Crisp

A typical British Telecom Monarch Call about 30 lines, and up to 120 extensions. There are abbreviated codes for long or

Connect system costs about £5,000 a year to lease, excluding VAT Enough to make a chartered accountant

certified? Not if he works out the sum a middle-

sized business spends on a system that's out

Let's start at ground level Many systems fill a roomful of expensive floor space with switching gear.

But ours slots its microprocessors into a cabinet the size of a vending machine.

Yet it's flexible enough to handle up to

And if your accountant were to look through its facilities he'd soon begin to see the number of ways an old phone system can lose you business.

For example, if the extension a caller wants doesn't answer he'll hang up and call someone else.

With the Monarch, you can have calls diverted to another extension if you're going to be busy or out. In any case all unanswered calls are automatically returned to the switchboard after about 30 seconds.

Making calls is easier too.

regularly used numbers, the last number you rang can be redialled automatically, and if another internal extension you want is engaged you can get the phone to ring you back when they're free.

In short, you can tell your accountant that you'll be wasting less time over calls and be more efficient in handling them.

And more time means more business.

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THE ELECTRONIC OFFICE VIII

User friendliness in the computer. Alan Cane explains

New methods of input

computer was, in the early days at least, not for an ord-inary mortal. Even the specialists found it something

of a chore.
The first successful electronic computer, Colossus 1, built by the British in 1943 to crack German military codes, had its operating pro-gramme hard-wired in place, meaning that if the operators wanted the machine to do something different, they had physically to rewire the heast. The data on which it oper-ated was fed to it on paper tape, which It could read at the quite astonishing rate of

5,000 characters a second. It is a far cry from Coloss to the kind of input taken for granted these days-key-board, screen and a roomful of operators entering the It is quite difficult eve

now to understand the kind of impact key-to-tape (which made the name of Mohawk Data Sciences, now MDS) and key-to-disk (which established the reputation of CMC). Both these companies realised the value of using a small, cheap minicomputer to validate and format data and

store it to make it accessible to a hig, expensive mainframe . computer without taking up valuable processing time on the frame itself. All of this has relevance to

the period, not over hy any means, when most of the data processing carried out by a company was carried out in the computer centre. Again, mere mortals, stay clear!
With the steady "leakage" of computing power from the computer centre out to the periphery, the search is on for hetter ways for ordinary bustto computers and get sensible

Tom Stewart, a consultant with Butler Cox and Partners, who has been heavily involved with the ergonomics (the fitness for human use) of computing puts it very strongly:
"My own personal view is that the one issue which will dominate the 1980s is user friendliness." friendline

"User friendliness," he goes on is much used and perhaps overused: "The exampte that springs to mind is the cash register or till that, instead of having a little tight that stays on to tell you it is working, says 'Hello' in its display."

Differences

"That fools no-body," he says: "It is a eash register.
It takes money. It is not really saying 'Hello.' All that the 'Hello' is saying is that the power is switched on. That is a gimmick and it is very institution of the saying after a cheef pariety. irritating after a short period of time."

So in looking at new methods of computer input-which is what communicating with a device in the electronic office is all about—it is important to distinguish between the gimmicky and useful, between the valuable and the merely inflexible.

Hand-written input is beginning to make its mark. The

commercial systems available today chicity evolved out of work carried out at the National Physical Laboratory. The Nacional Financiale Bank in Mexico City has Installed a system huilt hy Transaction Security. Their enstoners have to sign their names on an "electronic notepad" before they are allowed to withdraw cash. The recognise the signature and with stored combare

samples. Quest Automation has a similar system; lts Micropad incorporated in a is now number of other manufacoffice systems turers' Rediffusion, for example, offers the Micropad in its equipment as the "Write-

away " facility. These systems, however are somewhat limited. Characters have to be drawn clearly, and they have to be written on specified areas on business forms. Fine for order entry or stock checking, but of little use for free band text entry.

Hand-written entry, just like keyboard entry is still a slow method of getting data into a computer. A new and exciting idea is the use of digital optical readers.

These are now able to read a wide variety of type-faces and can scan and enter a whole sheet of text in matter of seconds. Some of the newer machines can switch rapidly between optical reading mode and facsimile mode. If the machine comes up against a character that it does not recognise as an anthorised letter or figure, it simply switches mode and captures the image of that character as a stream of

binary digits. These fast entry methods could save time and labour in the processing of large amounts of text, the input of an entire book or newspaper for full text retrieval, for example, but they are dependent on sophisticated finding and methods of extracting the

Voice input is perhaps the most exciting prospect. It is also perhaps the most distant, sithough remarkable progress has been made in the past few years. There is a large difference between the technical problems of voice generation —to produce systems like talking watches and type-writers or automatic landing systems for airline pilots and the technical problems of

voice recognition. Some of today's systems are able, with careful training, to recognise 200 or so words. But the general belief is that it will take much quicker microchips and much more advanced software techniques the "Fifth Generation" computer is usually invoked here before voice input makes significant progress.

In any case, most computer specialists believe there is a long way to go with conven-tional input techniques before the most esoteric need be

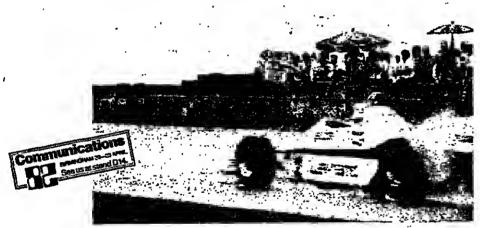
Voice response syste good examples of a simple but effective way of communicate ing with a computer. terminal is a touch tone telephone. It generates pairs of andio tones which (as electrical frequencies) the computer can be programmed to recognise and translate into computer language—binary

digits. If the data is entered correctly, a speech synthesis chip in the computer is triggered to pass simple messages down the telephone line "O.K." "Now give order number." "Thank you and Goodbye." This is all useful information compared to the gimmleks of which Stewart despairs.

For more detailed information on the Philips EBX 8000 DV write to: Philips Telecommunications, P.O. Box 32, 1200 JD Hilversum, the Netherlands. Telex 43712.



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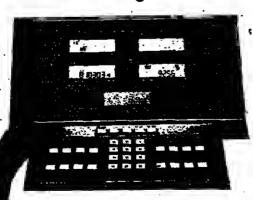
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than your communication system of the future for your office of the future. Ask for information on how Ericsson MD 110 can fit into your organization's future plans. Today.

Developments in automated mailing

"THE LAST thing I want to see," said Mr John Moody, director of marketing for Pitney Bowes, "is the paperless office."

Why the need for such capacity? More than 28m business letters are posted in Britain every day; and Post Office. a host of smaller companies, make their money from machines which handle automatically the growing flood of office mail — with equipment such as slitters, guillotines, inserters, weighing machines and frankers.

Mr Moody's worst fears seem unlikely to be realised. While computer and communications companies wave slogans about the office of the future, companies like Pitney Bowes and Rooeo Alcatel are experiencing a small boom in machines to handle paper.

Ironically ecough, the very device—the computer—which has given rise to the promise of the paperless office, is at the root of the growth in the mar-ket for automated mailing de-

According to Mr Rohert Gardner, managing director of Roose Alcatel in the UK, this growth has been a mirror image of the growth of the minicomputer. Companies which automated

their administration and their correspondence using the new, cheap minicomputers discovered a new problem; how to deal with the reams of print-out the machines generated.

The only effective answer. especially for the middle-sized to larger business, is automation in the matiroom. Which is why Pitney Bowes, Roneo Alcatel. Bell and Howell, Mailing and Mechanisation. Boewe and Mechanisation. Boewe and others are finding it hard to keep up with demand.

The only sector of the market where growth seems depressed is the small husioess area, where even a small automatic franking machine costing less than £700 represents too much outflow of cash in these straitened times. The major manufacturers make ranges of off-the-shelf machines costing typically up to

£10,000 or so.

Above that, there are the semi-custom-built machines monsters which can cost more than £50,000 and which are specially suited to a particular

Mr Gardner believes the trend is towards smaller, cheaper machines which can be modified easily, or indeed even throwo out if the company's requirements change. But the largest automatic

mailing systems—Pitney Bowes top-of-the-line 3100 Computer Output System is a good example—represents the last echoes of the splendour of Victorian engineering in the office.

They are equipped with electronic controls, these days, to be sure, but there is a rare mechanical grandeur about these leviathans.

At full stretch. Pitney Bowes claims, the 3100 can produce 6,000 stuffed and stamped envelopes in an hour.

Bowes, is the paperless office." every day; and Post Office
Pitney Bowes, and its prinstatistics suggest the major

Figures from its own surveys indicate that while husiness-to-business mail dropped from 36 per cent of all mail to 32 per cent between 1975 and 1980, the volume of what it describes as "advertising, financial and greetings" mail rose from 33 per cent to 44 per cent. In the same period, tho number of holders of credit

cards rose from 5m to 12m. So much of this mail is flow ing from husinesses to private households and comprises financial statements of one kind or another; and almost all of it generated hy computer.

Example

Many husinesses today. Mr Moody argues, are simply "factories that produce letters." An example is the Scottish Trustee Savings Banks. The four TSBs have a Glasgow computer centre which processes data on all cheque transactions, savings account withdrawals and deposits and cash withdrawals and deposits recorded hy the banks' automated teller

are processed every month at the centre and it also posts all monthly and interim statements of account to the banks' customers. That means some 4,000 to 6,000 statements produced every working day and donhte that number on Fridays. Uotil the end of last year. the computer-generated state-ments were sent to the hranch

Some 4m customer accounts

where the account was held for posting. Tedious, time-consuming and expensive. Then the computer centre installed a Pirney Bowes 3100. This machine accepts con-

thuous stationery from the com-puter printer, "bursts" the accounts toto individual docu-ments, trims them, folds them, inserts each Item into an envelope, seals the envelope and finally franks it with the correct

This system can run at up to 85 statements stuffed into envelopes a minute.
The 3100 COM costs around

£55,000, but Pitney Bowes reckons the TSBs could get their money back in 18 months. It works like this: the Post Office gives a rebate on volume mail which is already presorted according to Post Code. In the case of the TSB this is quite substantial - around 20 per cent.

Now the 3100 is fitted with an optical character reader which can send the post code marks printed on the first page of each statement so it is able to separ-

ate the statements into batches The second class postage hill for 30,000 or so statements a week is about £3,750, or around £200,000 a year. And 20 per



The latest high-speed mailing equipment from Pitney Bowes, the 6100, is demonstrated at Prudential Assurance in London

cent of that is a very welcome addressing machine.

Mr Gardner of Roneo Alcatel believes that UK automated mailing methods are the most sophisticated, anywhere. British, for example, do not like letters which have been "burst" by machine—and so have ragged edges. Thus, British mailers have to have guillotines to trim the edges. The use of optical mark readers makes it possible for the mailer to treat documents in special ways. The machines can be set up so that a batch of letters are inserted in window envelopes so that the

Pitney Bowes is still waiting for Post Office approval for one of its most sophisticated products the remote meter reset-ting service (RMRS).

window.

address always shows in the

At present, postage meters— the devices which are actually programmed with the amount of postage credits a business has bought—have to be taken to a Post Office to have credit entered into the machine.

With RMRS, the user simply telephones a computer centre (run by Pitney Bowes), and responds to a set of questions using a special key pad. If all is in order, the computer issues two reset numbers with which the user can unlock the meter and enter a set amount of credit. But all of this is spectacular top-end machinery. For the smaller businessman, autosmaller businessman, auto-mated mailing probably means

a set of scales and a postage metre, together with a simple

whether of buy, lease or rent Other decisions include identifying which functions in the mailroom could profitably be

automated. Labelting machines, example, apply typed or computer-printed addresses to envelopes; folder inserters, which need be little bigger than a desk top copier, can save time and energy in businesses which depend on repetitive

mailings.
So there are products in plenty—but what is the future for the mailing room suppliers? Will their business not become unwanted with the development of the electronic office?

John Moody argues that with
the acquisition of Dictaphone.

Pituey Bowes has prepared itself for an electronic future.

But the electronic office may be some way off. He sees defensive strategies on the part of the Post Office (discount rates for volume users, together with additional services); problems with compati-bility of equipment (electronic office standards have yet to be agreed); and education (it will take a generation which grew up with computers to accept word processing and electronic mail) as the principal barriers.

Meanwhile, the automated postroom business will continue to grow at a minimum of 10 per cent a year.

A. C.

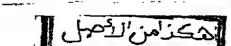
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A big future is seen for LANs (local area networks) which connect all the equipment needed. Robert Raggett reports

Linking systems: heading for a \$1bn business

THE SELLING of systems for organisation and capable of dual use is sporadic and usually such as printers. LANs allow and one of the world's leading has been little exploited subsequent handing over of cabling together all the elec- permitting each attached termi- brief. tronic equipment found in a paters, data terminals, word processors, copiers, printers, telex machines, telephones will be a billion-pound business some time during this decade. So say analysis of the increasingly look-alike communications and computing industries. In response the number of suppliers of these linking systems, known as Local Area Networks (LANs), are multiply-ing at a breathtaking pace.

always tended to be the wall-flower at the office equipment ball-especially in the UK. Although facsimile bas long

been hailed as on the verge of blossoming into a widely used

form of communication it has

Needless to say the mann-facturers claim the widespread acceptance of facsimile is not

ar away and it is increasingly.

his great technology of the

uture was first discovered by

lexander Bayne in the 1880s.

Facsimile is the transmission

a document along a telephone

ne where the received signals

re converted into a reproducion of the original page. In rude terms it can be compared

to a sort of remote photocopying

where the copy is fed out at a different location.

never happened.

(le perhaps the prospect. It is the most distant, ackable prostes or in the past for ly a lacke differ. It the technical voice generation is "Salems like here and type itomatic landing airline pilots."

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A LAN may be loosely defined as a limited distance communi- worker is not economically system for transporting the cation system owned by a single viable, especially since individata, and peripheral equipment

nal to communicate with any other. Although equally applicable in factories, hospitals and ally considered to be the will be built. The attraction of tying together varieties of However, the provision of each type of machine to every

Facsimile transmission, a specialist function

Always the office

wallflower

efficient way

Facsimile has also bee

communicating.

was, traditionally, the computer. This gave rise in the universities, LANs are gener- late 1960s to distributed data processing in which a number foundation upon which the all- of terminals, each capable of electronic office of the future handling local computing tasks, of terminals, each capable of shared the increased memory and number crunching capaostensibly disparate office bilities of a large central com-equipment is prompted by a puter. In recent years the cost need to increase efficiency and of actual computer processing effectiveness in the sector, has decreased exponentially. and the expensive items bave now become the transmission

In this context the most sive resources, and facilitate expensive electronic resource an increase in the efficiency of LANs will support a mixture first LAN was born. of terminals from different

manufacturers. National and international communication networks for business users have been the subject of attention, and not a little improvement, for some time. Intra-organisation communication, by contrast, was a neglected area until quite recently. That this has changed, and that LANs are in the vanguard of the drive for increased office productivity, is the result of the recognition that, in fact, upwards of 60 per cent of information traffic generated in an office only moves within the confines of

a single building or site. One of the very first LAN implementations was begun in 1973 by the U.S. company Xerox at its Palo Alto Research Centre. In the Centre's computer departments it had been first decided to equip each researcher with a small personal computer, the Alto. When sufficient numbers of these were in use, it was then decided to link all stations into a coberent communication system, thus transforming tradi-tional methods of information

distribution and allowing peripherals to be shared system-known Ethernet—subsequently found its way into every major Xerox facility. This was followed by the furnishing of systems to the Executive Office of the U.S. President, to the bouses of Congress, to the National Bureau of Standards, and elsewhere. By 1980, in what was a unusual move, the

workers to share these expen- manufacturers of silicon chips. Intel. announced their intention to work with Xerox to develop ing the transmitted signals of Ethernet specifications for a light. storing, manipulating and dis- Ethernet specifications for a tributing information. Most wider commercial market. The

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As with any highly marketable product, the development of which largely lovolves the re-working of known technologies rather than the discovery of new ones, there is little coo-sensus amongst present and putative suppliers over the most efficacious way of going about things. At present there are three types of LAN systems which can be considered major—the bus, the ring and the star tions on these three themes. The major LANs can be differentiated on a simple level by their physical pattern of topology. A bus system is one in which terminals are con-nected, via special interface davices, on to a length of cable. A ring system, io some senses, a bus with its two end-points joined to make a closed loop.

A star system, as its name implies, is made up of a number of cables radiating out from a central point. This ceotral point functions as a switch to allow the any-to-any commuoication between terminals attached to the different spokes

Physical link

The particular topology of a LAN does not dictate which type of cable -- coaxial, twisted (telephone wire), or optipair (telephone wire), or opti-cal fibre — is actually used to pany, Strategic Inc is on record a node, by which terminals are provide the physical link as believing that "... Xerox's linked to the ring, means a between communicating ter-minals. However, the majority fait. This will happen within of bus and ring structures use two years."

coaxial cabte, while the start The o fairly unusual move, the coaxial cabte, while the start. The original calculation overcome complete system shut-prestigious computer company, networks generally use twisted behind the Xerox tie-up with down resulting from a fault on Digital Equipment Corporation, pairs. The use of optical fibres DEC and Intel and the the ring. coaxial cable, while the start

because of the problem of tapping into them without destroy-

The speed and capacity of LANs similarly has no direct connection with particular topologies. At one end of the bus spectrum a system can proride a transmission speed of 12m bits of data per second and support over 65,000 connected terminals (Wangnet); at the other, transmission speed is 240,000 bits per second with 65 connected freminals (Cluster-One). Rings, in like fashion, range from 60m bits of informrange from bom buts of information per second and 250 sta-tions (Demos) to 12m bits per second and, for practical pur-poses, an unlimited number of attached terminals (Domaio).

The majority of LANs so far announced are based on the bus concept. Chief amongst these is the Ethernet system. Following the 1980 pact between Xerox, DEC and Intel, it was anounced that patented Ethernet tech-oology would be made avaitable. at little or oo cost, to any manufacturer willing to embody such specifications in its future product line. So far about 300 manufacturers have signed up, the latest being West Germany's goliath clectrooics company,

The Siemens' endorsement of Ethernet comes at a good moment. While certainly the top of any LAN popularity polt, a number of U.S. experts have recently cast doubts oo the value of the system. Thus, for example, the president of the

patented technology to allcomers, was to Ethernet as a de facto standard. This seems likely to succeed. and despite conflicting reports coming from the U.S. official electronics standards body, the IEEE, it seems probable that the official LAN standard for buses will be very similar to Ethernet. Of course, this may not preclude official endorse-ment of other buses or other

Ring system

LAN technologies.

Ethernet does not, in its present form, allow voice traffic to be mixed with data. Other bus systems and a number of ring systems—such as Racal's forthcoming PLANET—do. In general ring LANs are more popular with European manuwith a system at Cambridge facturers, developed developed at Cambridge University baving a position somewhat analogous to Ethernet in the bus context. Rings may be cheaper to implement in some respects, having simpler access and control mechanisms They also operate at higher speeds and over greater distances. A research project, Universe, is underway in the UK to investigate the feasibility of linking a number of Cambridge rings (or other LANs) through three metre satellite earth stations and Europe's Orbital Test Satellite. This type of system may be needed by certain categories of

Inevitably, rings bave temporary close-down of operation. Relatively expensive solutions are also required to

One of the simplest ways of building a local area network establish is to use a modified PABX (private automatic branch exchange) or data switch. This approach is currently favoured by companies such as ITT Business Systems and Plessey. The resultant star-shaped network has a number of advantages, not the least of which is that the majority of offices afready have some or most wiring installed (the telephone system) and possibly a switch that can be suitably modified. The drawbacks are a relatively low system speed—about 56,000 bits per second—aod reliance on control at the centre which means that the whole system is likely to be jeopardised if the switch fails.

> Although some front runners are emerging (Ethernet and, for larger applications. Wangnet) there is considerable uncertainty as to which LAN systems will stay the course. So much so, in fact, that companies in the UK like Computer Antomation are working on both ring and bus LANs. There are some notable absentees. Japanese companies have yet to make any pronouncement of significance on the subject, but perhaps the greatest unknown is the attitude of IBM. Some part of what LANs are all about can be accomplished already with IBM systems. However, the company is known to adopting an attitude to LANs proper. In March it presented four papers to the IEEE committee concerned with LAN standards. These were what it termed its "best thinking" on the subject rather than a proing included two discussions on ring networks and one on a star configuration.



World **Electronics**

THE U.S., JAPAN AND EUROPE-COMPETITION OR COLLABORATION?

LONDON-9 and 10 JUNE, 1982

Japan's emergence as a major world force in electronics and the resulting reactions in the United States, long used to industry leadership, and in Europe are the main themes of this conference. Many vital issues of business strategy and public policy are raised by this conference with expert commentary by the impressive panel of speakers in government and the industry from Japan, the United States and Europe. They include:

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a similar machine at the othermeteorological applications and end. is made in the UK by Muirhead There are three broad categories of facsimile equip-One of facsimile's advantages ment available for general com-mercial use, with a fourth word processors is that it can reproduce drawings, signatures and letter headings. It is widely appearing on the horizon. Inter-national standards for each used in Japan where the number of characters in the script make category or group are set by the Comite Consultif International Telegraphique et Telephonique. Any machine which meets the CCITT standard will be able to slightly more widely adopted communicate with that of another manufacturer which also meets the standard. Non-complying equipment can only communicate with machines of peing cited at an integral and in the U.S. than Europe because ital part of the electronic of the large distances between ffice. This is ironic because centres and the slow postal centres and the slow postal Facsimile has, until now, been the same make.

used makely for specialist dedicated functions usually The market for Group facsimile machines which takes within a company or for sending between four and six minutes information to one other organisation. For instance, to transmit one sheet of A4 is magazines often send copy to their printers by facsimile and very small. Rank Xerox has had the largest share of this market. Group 2, which like Group 1 uses analogue techthe Financial Times uses it extensively for sending copy to nology, can transmit a page of our printers in Frankfurt. The original document is very Specialist facsimile with a closely scanned by a beam of high quality and fine resolution light which differentiates is also used in newspapers for A4 in three minutes.

Group 2 machines are sold by a range of companies in-cluding U.S. computer manubetween dots of light and dark. stansmitting complete printed facturer Burroughs, ITT, 3M. This information is transmitted pages including pictures, electronically along the tele. Similar equipment is used quite phone line to be reproduced by extensively for military and Plessey, Siemens, NEC and

At the end of 1980 the CCITI ratified the standard for Group 3 high speed (relatively), digital facsimile. For a number of years the market for Group 3 machines was dominated by Kalle Infotech, a subsidiary of Hoechst the German chemicals company, with a machine made by Japa-nese photocopier manufacturer Ricon. The Kalle Infotech facsimile was expensive compared with Group 2 equipment but had the significant advan-tage of being fast—30 seconds or less to send a page of A4.

Lion's share

Although Kalle Infotech still has the lion's share of this level of machine it is not com-patable with the OCITT stanratification there bave been a number of new models launched by companies and Kalle Infotech has also launched a compatible model, but it is one of the most expen-

At the moment there are more Kalle Infotech compatible machines sold by Ricoh in Japan and Rapicom in the U.S. —than there are meeting the CCTTT standard. The faster machines are particularly eco-nomic for long distance trans-mission of documents because substantial saving in distance telephone

A number of companies are now selling Group 3 machines in the UK including ITT (made by Toshiba), Plessey (made by Hitachi), Burroughs, ITT and 3M. and Xerox (made by Fuji-

But even Group 3 machines are beginning to look slow. Advances in printing technology using lasers or ink jet systems together with digital transmission (telephone lines are analogue at present) mean a page of A4 can be transmitted in a second. With magnetic memory, such as a disc drive, pages may be sent even faster. In the U.S. Satellite Business Systems, an advanced communications network using high speed digital links between company sites via satellite, can send 70 pages of facsimile a

Facsimile has in the past two years become used as a public form of electronic mail. In June 1980 the Post Office started the first public international facsimile link to Toronto in Canada from the London Stock Exthange A number of other inter

national centres have joined.

including New York. Copy sent across the Atlantic is sent by high speed fax (about 2 seconds for an A4 page) via satellite. The service, known as Intelpost, has been extended to a comber of towns throughout the UK using more conventional equipment. British Telerom, which was only legally solit from the Post Office last

Autumn, has a rival service

called Bureaufax. Jason Crisp



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Plessey Communication Systems Limited Beeston, Nottingham, United Kingdom NG9 1LA Telephone: Nottingham (0602) 254822 Telex: 37201 Dictation equipment becomes smaller but more sophisticated

Battle is on to capture new markets

fastest-growing sector of dicpocket-memo market which last year grew by 10 per cent. Philips, the market leader in while desk-top machine sales dictation equipment in decreased slightly.

Philips, the market leader in equipment in Britain, will introduce

companies supplying portable dictation equipment in the UK. Of these, certain Japanese and German were highlyrated in an independent survey by "What to Buy" magazina; they include Sony's input to word processing.

BM520; the Olympus Pearl Olympia, meanwhile has introCorder 802; the Assmann duced one of the world'a MC6; Sanyo's M-1001; and National Panasonic's RNZOID. There are at least 55 varieties of portable units now on the

Philips has just introduced what is claimed to be the smallest pocket-memo in Britain, the 660, weighing only 144 grams and designed for the busy executive who demands a high performance but small and easily accessible pocket-memo.

As manufacturers rush to introduce smaller and moresophisticated dictation machines, the appeal of the pocket-meme is well nigh irresistible for the busy executive Suddenly, says Lanier, the U.S.based office equipment group, "it's a lot easier to get a lot more done" with its soon-tobe-launched

be-launched micro-cassette "Pocket Caddy" which, it says, "is designed to fit your hand like e glove — like the controls of a well-designed sports car . . . its few buttons are positioned where your fingers are when your hand is at rest, which makes dictation smooth and natural."

Thos. Hill, with its range of neat, Assmann pocket re-corders is just as effusive about its mini-cassette models that are "lovely to look at, delightful to hold, a perfect partner for anyone on the municate, trap ideas, thoughts

and messages." Mr Robin Hayward, Philips' general manager responsible for dictation activities in Britain, comments that the introduction of the ultrasmall 660 pocket memo to Philips' already extensive range, reflects tha trend in market-place towards portable dictation equipment. Potential users are looking towards smaller machines which combine the

terminal.

network.

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Seeing is believing

has transformed the telex, taken it out of

benefits of desk-top machines such as indexing—with the benefits of an easily portable

further models during 1982 and foresees that as more companies turn towards word processing to solve their word output problems, so they will look towards dic-tation equipment as a logical

duced one of the world'a alimnest dictation machines, the new DG-601 model, which weighs 6.7 oz and sells for around £69. This minicassette unit is compatible, of course, with Olympia's desk-top units such as the DG-602 dual-purpose dictation and transcription machine (with electronic index marking and search facility) and tha Olympia DG-505 tran-scription unit.

Wizardry

The latest item of technological wizardry from Sony is the tiny BM 510 portable dictator, designed to fit neatly into the smallest hand

The BM 510 (which sells for about £100 plus accessories) is just over five inches long and only ? in. thick, but despite its minature size the unit is packed with numerous useful items and has a twohour recording capability on its micro-cassette.

Features of the BM 510 include slide-switch control; two tape speeds for selectable record ing time, counter-inertial flywheel and servo-controlled motor giving a constant tape speed and lower power con-sumption; built-in micro-phone, automatic gain control for optimum recording level; an alarm as the tape approaches its end; 3-digit tape counter; and automatic power cut-off system which prolongs battery life.

Sony also claims that the facili-ties of advanced desk-top dictating systems are now available to executives in a pocket-sized machine. Advances in micro-chip technology have been applied by the company in the design of its BM 600 dictator-transcriber which uses full logic control

the busy executive or his secretary—to concentrate on the business in hand.

Weighing only 12 oz, it can easily be carried in the pocket or briefcase. However, its controls are designed for ease of operation in either the band or on the desk.

The BM 600 provides up to two hours dictation on its micro-cassette and its features include an LCD tape counter index points on the tape. This memory is ideal for transcribing as well as returning to the same portion of the tape when clarifying a point during a meeting. addition, it can be used to repeat a chosen section of the tape—useful when one is learning, for example, a new

The UK market for dictation machines for use in the office is approaching £12m a year, while the centralised dictation systems market (includ-ing PAX/PBX systems; direct access and separately wired systems) accounts for at least another film.

Best-buys listed in the "What to Buy" survey of the desk-top sector include the Assmann M105; Sanyo's TRC-5050 and Sony's TRC-

The latest addition to Philips wide range of desk-top units is system 800 which incorporates many advanced features; it is fully compatible with other Philips dictation products, using the mini-cassette 2, with a visual "mark-and-

find " facility.

The 812 is a dual-purpose unit (dictation or transcription). depending on the accessories chosen. The hand microphone allows the author complete control of the unit, while the new, lightweight beadphone and a redesigned foot-pedal give the typist greater flexi-bility than before.

Another recent addition to Philips range is the pocket memo 195/10 which features fast-forward audible scan. Weighing only 240 grams, the slim design of the 195/10 allows it to slip easily into a pocket. The machine uses the mini-cassette (2 x 15 minutes) compatible with the full range of Pailips

equipment Other models in the company's to ensure simplicity of operrange include the 590, designed to give high quality recording with single-handed operation; and the tiny 660 pocket memo, already mentioned, which uses the minimum and the single 20 minimum and the s m-cassette, giving 20 minutes recording time. The 187 transcriber provides a transcription facility for both the standard mini-cassette and the mini-m-cassette.

Rising sales

Grundig is steadily regaining lost ground in the UK market, particularly since the launch last year of its new desk-top baby, the Stenorette 2300, a full-feature making them. new desk-top baby, the Stenorette 2300, a full-feature machine about the size of a paperback book. It can be used for either tran-scribing or dictating. The Stenorette 2300 closes the

gap between classical port-able dictating machines and desk-top equipment, accord-ing to Mr Gunter Schroeder, director of Grundig's business equipment division. The company's leading market

position in Germany has not orsy been stabilised, but extended, he adds. As far as the German market

is concerned, we may have reached the limit of growth, but increased sales are expected from the export market, such as the UK." Grundig's pocket-size machines (which both won design awards at the last Hanover Feirl are the Stangardth 2000

Fair) are tha Stenorette 2060 (selling for £125) and the 2020 (costing £84.50). The company's diverse products

range from sevaral central-ised systems to specialised desk-top machines with educational applications. Ten years ago, Grundig com-manded a 48 per cent share of the dictation equipment market, although this declined as low as 17 per cent. The figure today stands at around 20 per cent.

While Philips now holds 57 per cent of the UK market, Dictaphone, with its strong emphasis on centralised systems, has moved up to second place. Thile Dictaphone holds a 62

per cent share of the centralised market, its main productline is still desk-top machines and portable units. Lanier Business Products, the

U.S. hased office equipment

company is to show four new microcassette dictation machines at the International Word Processing Exhibition at London's Wembley Conference Centre (May 25-30).

The new machines are fully compatible and range from a pocket dictation machine with electronic cueing where alterations to dictation can be programmed to automatically replay before transcription — to a central recorder that can be accessed from any telephone in the

The four new products are the Pocket Caddy (with electronic cueing) which sells for around £100; the Insight, a desk-top unit with full digital indexing and work-totalising; the Messenger, a sophisti-cated top-of-the-range desk-top machine that allow's the user to remotely separate dictation according to order of importance; and the Micro-matic III, which can be sed from anywhere







Pocket-memos from Sony, Grundig and Philips

the world and provides 12 hours' uninterrupted record-

Lanier, with a worldwide turnover last year of \$300m, has Lemier. been remarkably successful in the U.S., where the group also has a 37 per cent share in AES, manufacturers of standalone and shared-logic word processing systems. Last September, tha group introduced into the U.S. a low-end word-processor called "The Easy

One" and also launched a small office computer system, "Computereze," designed for first-time users.

machines in Japan as well as in Georgia, was among pioneers of the endless-loop dictation system which allowed a secretary to start transcribing with seven seconds of the originator beginning dictation.

Lanier's European operations

are headed by Mr Haro Murphey, who expects the company to at least double i share of the UK dictation market by the end of the year. The company on began its UK operation 1976, but in the U.S. it es 4,000 in marketing, su port and services and h spent more than \$20m in a search on its last eight pe

Michael Wiltship

Computerised controls assist documentation workflow

Larger companies benefit from centralised systems

dictating a letter is soaring, too. Some companies estimate that the cost of an average letter, dictated in sborthand to a secretary, could now be £10, while a letter processed by a more efficient centralised dictation system could cut the cost

to £5. Despite the economic advantages of electronic dictation equipment, only 35 per cent of businessmen use these labour-saving devices. The market potential for the growing range of dictation systems is therefore considerable.

Even with the advent of word-processing, many businessmen need educating about the time-management advantages of these systems, according to Mr Robin Hayward, general Robin Hayward, general manager of Philips dictation

executive dictates letters by traditional sborthand methods is rather like criticising a man's driving—a very emotive area." be adds.

The executive who dictates letters by shorthand "is forgetting to take into consideration the time of two people ation the time of two people accomplishing a single objective, while his secretary sits around waiting to bear what he's going to say," says Mr Harold Murphey, head of Lanier's European operations.

Centralised dictation systems offer the most cost-effective

means of dictation for the larger company. The main sup-pliers in the UK centralised market are Dictaphone; Thos. Hill International; Harford Systems; Lainer: Peter Peter Sony; Philips: Communications and

In centralised systems, instead of dictating into one centralised machine and then manually transferring the tape into another for subsequent trandictates over the elecutive simply dictates over the telephone into a central recorder—a modern equivalent of the old "typing-pool" concept.

While centralised systems

white tentransed systems are more readily accepted in the UK than the rest of Europe, the method is widely used in the U.S.

In the 1960s, centralised systems were designed on conventional designed designed

of conventing management's thoughts into information system bits," speech to keyboard will still be the most ventional desk-top machines, Dictaphone.
Thos. Hill, the Newcastle-hased group which bas around 600 centralised installations in linked by selector boxes to tele-phone lines. In the early '70s, a system evolved based on e direct-link principle — the author recording on the sama machine as that used by the

This was Dictaphone's Thought Tank system which revolutionised centralised dicta-tion. Some of today's most successful systems are still based on this principle, but in greatly updated form. The Thought Tank uses a loop of tape so that recording and transcribing can take place simultaneously, while the system decides to which typist's machine an author will be connected, It does this by assessing the typist's known speed and amount of outstanding work—the result is the fastest turn-

round of work for everyone.

Mr Bill Cottle, managing director of Dictaphone, explains that word processing units can be handling literally thousands of individual items of work in the system, a print-out on each week: some will be in dictation, awaiting attention, some will be going through keybone exchange system without the need for such costly extrast transcribed, some will be in the system, a print-out on stored dictation and the ability to work with nearly any telephone exchange system without the need for such costly extrast transcribed, some will be in the separate without the need for such costly extrast transcribed, some back with transcribed, some will be in the WP storage and some back with their authors for editing.

"How to keep efficient control of that kind of work visory control. Access to the throughput is becoming a system can be limited either major role of the dictation to the number of authors per

WHILE THE quantity of office itself more as information techpaperwork increases every year by up to 10 per cent, tha cost of office." he adds.

THE quantity of office itself more as information technology gradually takes over the work sensibly in accordance and accept dictation from ay-

leader in centralised systems, has two production-control systems, the Time Master and Mastermind, both designed to connect with the dictation input system and log every item of work and check its progress.

Depending on the configuration in use, the supervisor can locate any single item of work author, subject matter, typist or other categories and discover its exact status. No longer will anyone have to shout, "Who's got Mr X's letter

only tracing method in use in

many word processing units at

present.
The trend towards automatic

work control is significant. As

word processing, data processing, videotex, electronic mail and similar systems merge into

a more cohesive information processing concept, so the ability to enter fresh informa-

tion into that system will depend on the efficiency of the

Dictation from an originator's

own desk wil be the only prac-tical bulk input method—unless we are all to become our own

The electronic office of the

future may be paperless, but until we find a better way

efficient input method, says

Britain and claims to have a

third share of the user-market in UK centralised systems, is

The British-designed "MT"

uses mini-cassettes and is claimed to be a considerable

advance on anything else in the

field: it offers stored dictation

capacity with greater produc-tivity, control and convenience for both author and typist.

Mr Harold Walker, product manager, says the MT central-

ised system represents a funda-mentally new approach, combin-

ing microprocessor control with years' experience in cen-

Its features include electronic

switching from one cassette to

as special interfaces.

The "laT" has a work programming facility which provides a high level of super-

tralised dictation.

encouraged by the swift success of its recently launched "MT

dictation facilities.

keyboard operators.

flice." he adds. work sensibly in accordance Dictaphone, the UK market with work load.

Modular construction of the system enables an "MT" to be built to meet any configuration of recorders and mix of extra stored dictation capability. Savings on space can be con-siderable while additional units can be added in seconds.

In a reorganisation last year, Thos. Hill International (which celebrates its 50th anniversary this year) set up two new divisions: the information processing division and the dictat-ing systems division. The first

another company in the group —and the second distributes the group's own dictating

systems, as well as thosa of such established names as

new centralised system. The RD 6000 Network system is claimed to be the world's most

advanced computerised central system. It is designed around

its own microprocessor which provides a degree of per-sonalised service never before

considered possible.
Sony's Network probably

central dictating systems to use, both from the author's and secretary's viewpoint.

The central unit is housed in a cabinet weighing just under 73 lb (33 kg) with

under 73 lb (33 kg) with approximately the same dimensions as a small one-drawer filing cabinet.

Network bas a carousal of 24 cassettes accepting up to 18 hours continuous unettended dictation, and is linked to the

authors by telephone either

internally or externally. This means that it can be connected

Assman and Memocord. There is considerable interest in the marketplace in Sony's

TYPING CENTRE

Among the new centralised systems in the market-place is the British-designed "MT" from Thos. Hill International. The system's programming facility provides a high level of supervisory control

to Bloggs and Co?" which, of these markets products of according to Mr Cottle, is the BDP (Word Processing) —

where in the world, at ny time, and is approved by British Telecom.

When an author lifts he telephone, he or she is answered by a recorded voce which esks for a personal cole to be entered on the telephote. keyboard. The voice then gives all the instructions and guidance needed to use the system efficiently.

Dictation recording is by voice-operated-relay (VOR) that activates immediately speech; hegins, pauses while the author pauses and continues until the telephone hand-set is replaced, thus avoiding undue

Lanler, which has the largest share of the U.S. market for dictation equipment (39 per cent) has introduced an automated central dictation system. known as Super-Vision III, which will be featured at next month's Word Processing Exhibition at London's Wemb-

ley Conference Centre.

* Using advanced technology. to automate the dictation flowfrom author to transcriber, the system reduces "turn-round time" for users with a heavy volume of documentation and

correspondence.
Super-Vision III. claimed to be the world's most advanced dictation system is basically a computer to which can be attached a number of separ-ately-wired dictation handsets— and the office telephone system. The advantage this gives is control: tha computer can be used to give an instant read-out on a visual display unit of the number of documents recorded over a given period, their length and who made the recording, together with an indication of urgency. Information can be retrieved from the system in a block system called "Multi-sort" which, says Lanier, ellows users to create their own customised reports: data on all the dictation from, say, the marketing department for the last month; or the dictation of any one individual for the last year; or all the work completed by a particular typist over the last

The system also has the facility to print out data about the dictated material at 63 lines a minute.

Philips, while continuing to market its 260 Centralised system, with automatic cassette change bank, is planning to launch an even more advanced system, the 460, later this year.

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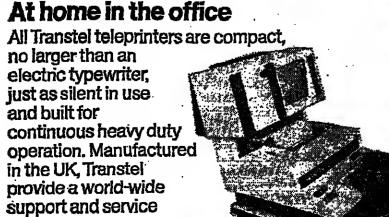


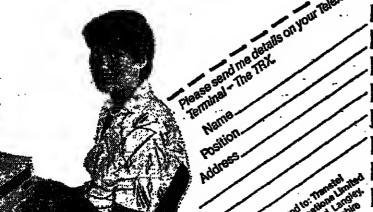
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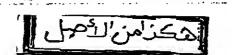
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THE ELECTRONIC OFFICE XI

The benefits that word processing brought to Cadbury

Looking beyond cost-saving

THE EXTENT to which. Among the largest users are whichever of its eight recording more than 40 typists is obvious efficiency of input can make or the sales accounts departments machines is used by the typist but, in the long-term, combreak a word processing whose letters can be typed able to do the work sconest. partially an important to the sales accounts department is shown alcohold the sales accounts department in the largest users are whichever of its eight recording more than 40 typists is obvious break.

The company first installed a direct link system at its Bournville, Birmingham, offices, about 12 years ago. This provided visors operating them via visual executives and clerks with an display units. Before word-instant on-the-desk means of processing was introduced there dictating letters and reports, straight to the typist who was to transcribe them.

But by the time Cadbury came to install word-processing equipment, however, that dicta-nion system was ten years old. It had gradually lost recording quality and overall reliability, slowing down the typists almost unnoticeably until the word-processing equipment brought the problem into sharp focus.

Keeping a log

by Mr Har

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Telera PABX

Mr Donald Pitt is word processing development manager for Cadbury, although his department takes work from the Cadbury-Schweppes, Cad-bury Typhoo and Kenco con-

panies' offices at Bournville. Word processing is used for replies to customers queries nd information requests for the consumer services department, drafting of contracts and conveyances for the legal departments bave 38 telephone department, the buying depart-solely for dictation purposes. ment's purchase orders and

break a word - processing whose letters can be typed able to do the work soonest department is shown clearly at faster with aids such as auto. This is arrived at by auto-

The department uses two the known speed of the typist.

Datatext IV shared logic wo

Systems with four full-time, 11

typist now seldom exceeds 10

the word-processing unit started, a work backlog, at peak periods, of up to two days began to develop. One of the causes was pinpointed to low quality audio

Poor recording quality was causing word processor operacausing word processor opera-tors to back-track over indis-tinct passages and the propor-tion of work requiring re-typing was on the high side. Cadbury decided to retain the principle of direct link dictation but to bring it up to date. They chose a Thought Tank 193 system from the Dictaphone Company.

Executives may still use a telephone on their desk to dictate. For most people, this is the PABX phone (Cadbury use an ITT 4080 electronic exchange), but the sales accounts departments have 38 telephones The Phought Tank system puts each caller through to

the head offices of Cadbury, the matically entered phrases and matically comparing outstand-confectionary division of dates within standard letters. ing work oo each recorder with

Outstanding work for each systems with four full-time, 11 part-time typists and two supervisors operating them via visual display units. Before word-processing was introduced there were 60 typists doing the same (or less) work.

A systems study determined initially how many typists dictated to them just 12 seconds initially how many typists earlier—the kind of fast input would be needed but soon after the word-processing unit started. typist now seldom exceeds 10

1.000 items

On an average day, Mr Pitt reports, the bureau's typists process one thousand items—although this can be only an accordance of the control of the can be only an accordance of the can be only as acco approximate measure since "item" covers everything from a standardised memo to a predrafted report. A new manage-ment information scheme uses statistical data from the word processor to keep an accurate picture of the department's

Adjustments in staffing, equipment and organisation may then be made io advance of problems, not after them. Centralised dictation and word-processing at Cadbury bas paid dividends: A cost-saving of

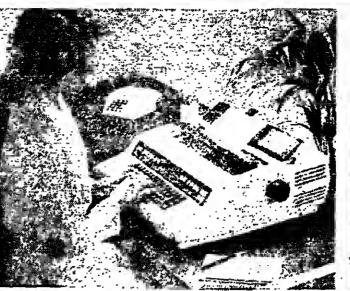
used to justify the dictation and equipment to an accountant," suggests Doo Pitt, "but not to me. I consider the more important benefit to be the improved typing service that my department provides and the time-saving which the cierical and executive staff make oow that correspondence is a matter of

telephoning letter references and variable data only."

In fact, far from being content with improvements so far, Don Pitt as a word processing expert, has some personal reservations.

"We must take more account of the job satisfaction element in the future of wordprocessing," he says.
"On a shared logic system, such as ours, the operators are keying in bits and pieces of data dictated to them without ever seeing the fluished results of their work in bard copy. "We cannot regard typists as

automatons; somewhere along the line technology must be applied to making the work interesting as well as efficient." That worry comes from one of Britain's leading exponents of word-processing techniques suppliers, take heed.



Electronic typewriters

The Xerox electronic typewriter, model 620 (top, left) includes a display that shows the material being typed. It also allows the operator to scan through a document to see an area of text to be revised. Top, right: the Xerox 615 model which can play out a full page of errorfree copy for financial documents and multipart forms



Olympia's ES 180 word-processing system, above, allows typists to correct errors and make alterations to text while those parts which were originally correct are retained in the system

The 293 centralised dictation system from Dictaphone

What a centralised dictation system did for the Automobile Association

How to speed up correspondence

system from Philips. The cassette is ejected after dicta-system, based on the mini-tion for the supervisor to take cassette, was compatible with away for immediate transcrip-other dictation equipment— tion. again from Philips—used by the AA at its beadquarters at the telephone at the conclusion Fanum House, Basingstoke.

The 0260 dictation system mark is automaticaly made oo The 0260 dictation system has thus been installed at AA offices throughout the country. There are 10 machines in the Newcastle office being used by

400 dictators answering insur-ance queries; eight machines at Basingstoke and others at headle Hulme, Cardiff and Eiskine, Scotland.

Used for replies

The automatic remote-putrolled dictation system perates over the internal tele-thone lines. Authors on pre-selected internal telephones vishing to dictate dial pre-letermined digits to gain access

o a machine.
On connection to a free nachine, the dictator hears a one lasting for three seconds ind the markine then switches in to record. There are eight licitation functions—such as ecord, stop and playback— which are controlled by the elephone; thus, by dialling a ertain number the author is ble to rewind the tape, listen nd maybe revise the dictation. The machine, which uses 24 ini-cassettes, can therefore tke up to six hours unattended lathines themselves are in peration 24 hours a day.

centralised dictation system is matic, but a bank operator indicated by the way it has supervisor is always on hand speeded up the processing of to deal with letters which correspondence by the Automobile Association, which has a this is the case, the dictator membership of 5.3m.

In 1979 to AA decided to supervisor by a light on the In 1979, the AA decided to supervisor by a light on the install the 0260 automatic panel. The supervisor presses remote-controlled dictation the priority button and the

> When the author replaces the index slip. All typists and antomatic transcriber machine, enabling them to immediately locate the end-of-letter mark or a special instruction mark.

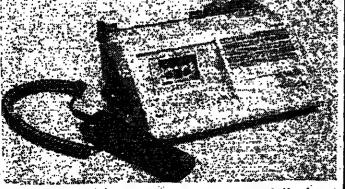
> The supervisor maintains a log of all dictation, entering the name and department of the author, the length of dictation and time received. An index slip is attached to the cassette, then placed in date and tima sequence for selection by the

sequence for selection by the typist.

The benefits in comparison with a file system—where the dictator sends the cassette and accompanying file to the centre for typing—are innumerable. Firstly, by using the 0260 remote-controlled system, the dictator can keep the file and have it at hand for dealing with further enumeres. further enquiries.

Secondly, there is no oppor tunity for the file or dictation to be lost in transit—and willst the author is dictating, the phone is engaged and he can-not be interrupted by phone calls. Furthermore, the user can dictate a letter immediately over the phone, rather than doing it all perhaps at the end

Michael Wiltshire



The 812 desk-top dictation and transcription unit from Philips

Given more time to think, an office clerk could come up with the odd original idea.

In 1905, a young clerk in the Swiss Civil Service, a man with a mediocre academic record, wrote a paper which was to become known as the Special Theory of Relativity.

Albert Einstein had learnt to think.

His method was to hold the problem of the moment in his mind relentlessly and without distraction.

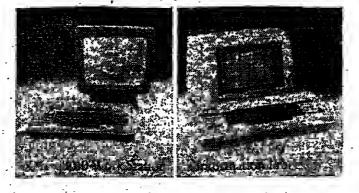
One way he achieved this was by never bothering to commit facts to memory. He felt it would clutter his mind, needlessly. There were better uses, he thought, for the human brain.

Imagine how much time and potential people in business waste with routine workaday drudgery. Chores that simply have to be done before the real work can be started.

Xerox build machines designed to take exactly that kind of chore off your back.

For example, you could have an information processor or word processing system that can edit, store, retrieve and generally manage figures and text automatically. Saving you hundreds of hours a year, time you can use to be creative, to think, to make decisions, do the things only you can do.

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text, graphics and records, thus reducing the amount of preparation time that would simply dissolve away. in producing information to make business decisions.

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And by doing all this our machines give you time. Time to do the things that only you could do.

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THE ELECTRONIC OFFICE XII

An increasingly effective role for the ubiquitous telephone

New telephone terminals offer greater flexibility

EVERY OFFICE has at least one piece of hardware which makes an electronic communications network feasible. The ubiquitous telephone which in the 1980s promises to play a key role in the development of

Companies are nnly alowly coming to realise that a cable-linked device to every office and most private homes offers considerable benefits when linked up to other equipment, such as a video screen. Moreover, data can be rapidly transmitted to a computer via a telephone line.

The telephone network promises to become even more effective — in spite nf the challenge from satellites and specially laid cables—because of the rapid technological development of nptical fibre cables, which will enable a dramatically increased amount of teleponne traffic to be

systems, such as British Telecom's Prestel which are spearheading the revolution in telephone use. Unfortunately Prestel is not turning nut as successful as some of the other videotex systems that have heen developed to use the telephone network.

Prestel bas only about 13,000 subscribers, about a quarter of the number originally con-sidered likely by this stage, and the number of times each Prestel user looks at a page has halved

The problem with Prestel was that it was marketed too generally to both private and business users. Not sur-prisingly, the system has fallen hetween these two stools and few private subscribers are in the network One drawback is the cost of using the information kept within the 200,000 pages plus the cost of the telephone call. A residential subscriber could easily run up an annual bill of £200 for quite basic Information, according to some estimates.

Main appeal

Prestel's main appeal so far has been to business users. In the travel industry, in particular, the system is used to obtain information about airline and train schedules and package tours. There is also

the telephone network—have with a new subsidiary. Disc. mises, information such as

don Stock Exchange's Topic use the system internally. share price service, for example, is flourishing and even IBM is Directors have viewdata-adapted televisions at their home. On Sunday nights they telephone offering Its customers viewdata as an addition to its computer the Debenham viewdata computer at Taunton, Devon, for detailed figures on the previous

BL has developed a system. Stocklator, which enables dealers to locate any BL car week's sales in all the stores throughout the country. held in stock by other BL throughout Britain. Dealers are being linked together by a system which consists of Philips Business Equipment viewdata terminals. linked by privately rented telephone lines to the main BL computer centre at Redditch. To avoid high telephone costs heing incurred by dealers far from Redditch, relay stations are being set up in the main

Dealers can also use the system to call up a large amount of information for a customer in the showroom, such as

regional cities.

nf videotex systems-linked to into private viewdata systems room or on a customer's pre-

hecome successful. The Lon- Debenhams is also beginning to

Branching out

Rediffusion Computers has the largest share of the market for private viewdata systems. It has sold 120 systems, including among its customers two retail - Milletts, the camping and clothing shops, and Findlays Hardware in Scotland.

For the businessman on the move, portable terminals have been developed wblcb can link into a private viewdata network or a public system like Prestel.

The system, made by Zycor, is called Teledek 5000 and is contained in a briefcase. This includes an alpha-numeric keypackage tours. There is a steadily growing base of users seeking market information about currencies, commodities, share prices and similar data.

Therefore has not prices, species appraisals, apart from being able to tell the customer on the spot how quickly be can get a particular car not in the dealer's stock.

Therefore has not prices, species appraisals, apart modem which link into the telephone network. Mr Ken williams, Zycor's managing director, says that with the terminal and access to a television receiver. perhaps in a botel

orders can be sent on the tele-phone lines to the main

The system costs about £700 and has already been ordere by Enropean banks, newspaper and companies with large sales There are other, less sophisti-

cated, ways in which a telephone can be used. The commercial possibilities of the answering machine have hardly been es plored. The machine could be used as a means of communication on a day's stock levels between, for example, a supermarket chain and its branches or in taking orders for advertised goods and services.
A scribophone, or writing telephone, enables the user to display drawings or graphs on telephone. By writing on a sensitised electronic pad, the speaker can alter a drawing

during the conversation. A portable telephone also has considerable advantages for the executive on the move who wants to receive calls when phone. The only drawback is that it is illegal — although widely available — since the Home Office will not release the necessary radio frequencies.

David Churchill

The Plessey Prestel-viewdata terminal which incorporates voice and communication in a compact desk-top unit. It has been described as "the telephone of the decade which will bring voice and data communication to the fingertips of most businessmen

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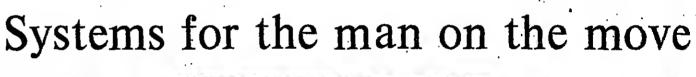
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A surge of growth in the mobile communications sector

THERE IS, still a growing market for mobile communications systems in Western Europe, dessystems in Western Europe, des-pite the recession. Factors hehind the industry's growth are strides in the technology which improve equipment design and keep costs down; the need for companies to keep in contact with essential personnel so that they can adapt quickly to changing situations; and, to a lesser extent, a desire to reduce fuel costs.

One of the main reasons why mobile communications has not hecome a larger sector of the telecommunications industry is due to the stringent regulations which govern the allocations of the radio frequency spectrum, coupled with the general congestion of the airwaves.

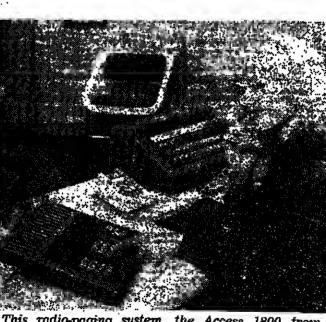
Mobile radin bas to compete for air space with other services such as hroadcast radin, televisinn, and even military ser-vices, all nf which seek to increase their existing alloca-

increase their existing allocations.

However, Citizens' Band radio system has now become established throughnut Europe, following the boom in the U.S. in the mili-1970s. Britain was one of the last countries in Europe to legalise Citizens' Band radio in November last

CB radin offers to small businessmen and to the public alike, a very cheap means of communication, albeit with a limited transmissing range of ahout 10 miles or so. Though much of the available channels on CB service seem to be aimed at pure social communications, it does allow a small service company, for example, operating in a limited area, the opportunity to change work schedules at short notice and warn nf

of CB radio—and its limitation repeater. In the UK, services—they might be encouraged to according to a more professional as Storm and Motorola.



This radio-paging system, the Access 1800 from Multitone, offers either single- or dual-channel operation on one or more frequencies, with access via manual control units or vin telephone and remote contact facilities

dictated that each husiness had a dedicated frequency in a particular area. Hnwever, such regulations bave been relaxed in Britain and the concept of community repeaters is now accepted, although it has been operating for many years in countries such as the U.S. and

This system means that a business with only two or three vehicles can share a mobile system with several other users, so capital costs are lower and the company still gets a private

In the U.S., companies such as Motorola and General Electric operate more than Many mobile equipment Electric operate more than manufacturers believe that 7,000 such repeaters, with up to more companies see the benefits 200 customers connected to each

adopt a mine professional system.

Pye, which is part of the mobile telecommunications
Until recent years it was not possible for small companies to afford full mobile radio systems because Home Office regulations in which companies with private mobile telecommunications companies, such as Air Call.

Last May, British Telecom started in implement its larger, ing with companies such as improved aervace. Air Call says

Large mobile radio equipment users include police and public utilities. These organisations often have some of the most sophisticated 'mnbile systems which provides high security and extra facilities. North Thames Gas, for example, allows its engineers to have allows its engineers to have automatic dialling just like a normal telephone system.

But for the executive on the mnve, in-car telephones are becoming extremely popular. However, the provision of in-car telephones has not been without problems. At one time, more than 1,500 people were on the waiting list in London alone to Join British Telecom's service which competes with private mobile telecommunications

that its car telephone facility: is growing at a rate of at least

10 per cent a year.
Today's car telephones can
either he operator assisted or
automatic, allowing the user to automatic, allowing the user to dial national and international calls directly from the vehicle. For those people who are moving around on foot, radia pagers are becoming more sophisticated, rather than simply bleeping. They are capable of transmitting short voice messages. Air Call, for example, has just completed investing in a new computer control system for its network of radio pagers—it is the largest service in the UK outside British Telecom's.

Its national network of pagers allows the customer at

pagers allows the customer at his nwn premises to record messages into the computer which are immediately transmitted in the relevant pagers up

mitted to the relevant pagers up to 40 miles away.

British Telecom whose equipment is provided by companies such as Multitone and Pye, completed updating of its network this year. Users of the BT system can opt for a nationwide facility or for the pager to be activated in one or aeveral of the 40 zones into which the country is divided. There are occasions, however, when motorists do not need direct communication with the

direct communication with the office, but they may well require information about motoring and weather conditions which could hamper a journey to an important business meet-In West Germany and some

other European countries, a system called ARI is now in. operation which automatically interrupts radio programmes when a problem arises. Since the country is divided into zones, the motorist only receives information relevant to the area. through which he is driving.

In Britain, the BBC has also, developed an autumatic radius information service for received.

information service for motorisis but problems with allocation frequences and money to rule the Carfax service is bampering its introduction.

Elaine Williams

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and a short of " (d. 12 mil.) a the Path they is not " to a delepty The Complete i to an reg . I wan been the highest could be AMERICA POLICE the ke extern a surand or back i of one of · . . . ከታ «ከነል

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in particular to read the millions of cheques that have to be dealt with daily. But the advent of text processing in smallar business systems is bringing OCR into a differant focus. In addition, a similar technique callad optical mark recognition (OMR) has carved a market niche where it is cost effective to make simple, single line marks on a matrix form of soma kind in order to record business data-stock levels for example. Most of the major computer

companias offer both financial document and page readers. Burroughs for example has a machine that can be loaded with up to 50 typed pages and will read them at the rate of 250/hour.

Increasingly such machines are eble to recognise wider ranges of founts (character sets). The Japanese company Totec has just launched in the UK a unit that can deal with OCR A and B (the original "computer" founts) and "computer" founts) and several others as well including Courier 72, Prestige Ette 72, Courier 12 and Pice 72. Of desk top size, it costs under £7,000 and is being marketed by

Mitsui Computer. Such machines can overcome an important bottleneck inexisting documents from other sources when they could be software cleverer ordinary rimpleyed on the more suitable printing founts (for example lists of editing and formatting. They also mean that the could be dealt with. Mice's typewriters can become

THE ELECTRONIC OFFICE XIII

Japan threatens the dominance of Xerox, says Jason Crisp

The fight intensifies for the copier market

THE JUNGLE warfare being waged in the copier industry shows little sign of abating. Despite occasional efforts by some companies to raise prices the overall trend continues downwards. There are aver more machines on the market, often wearing several different colours, while the advance of the Japanese into Europe and the U.S. continues.

Still dominant but increasingly besieged is the Xerox - Xerox, Rank Xerox and Fuji Xerox — which has the largest revenues both from its installed base and new cus-

Although Xerox has fought back flercely with new products and undergooe major cost-cutting exercises, both in Britain and in the U.S., it faces the increasing problem of the apparently unstoppabla advance of the Japanese.

At the froot of the Japanese column is Ricol, which claims to have the largest that of the

to have the largest share of the world market in units. In the UK, Ricoh copiers are sold by Kalle Infotech, a subsidiary of Hoechst, the German chemicala company, and by Nashua which, in spite of its name, is a U.S.

In the U.S. they are sold by Savin: Within the past two years Ricoh has begun selling copiers in both markets under its own cama for the first time. Its agreement with Nashua is not being renewed: The other major forca in

Japanese copiers is Canon which has been making significant advances with a strong range of competitive products, ays Mr Philip Oppenheim, of What to Buy for Business.

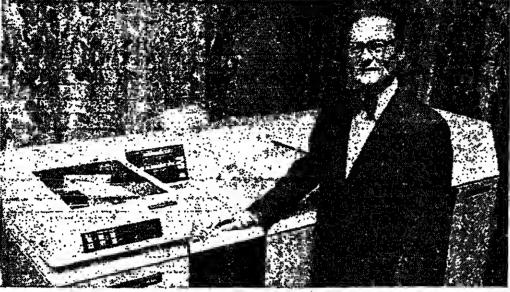
Five areas

Broadly speaking, the reprographics industry can be divided into five slightly overfapping areas. At the top of the range there are offset dupli-cators which offer a very high quality and a low cost-per-copy, but have a high capital cost. Second, there are the top-of-

which are very fast high The second major market quality and have ingenious area is with small businesses devices for collating reports. It and professional practices, is an area dominated by Kerox trading up from coated paper which would claim a quality of reproduction to challenge offset. It is in this area where, perduplicators and the copler is haps unsurprisingly, there have the British company, Gesteiner, certainly easier to operate. been the most dramatic price still has a substantial propor-The other main challeogers cuts-sometimes a customer in this area, for the momeot, may find a copier has fallen to

are IBM, Oce and Kodak. At price by more than a half withthe very top end of this range in 12 months. Xerox does not face any com-petition except from offset cutting in plain paper copiers duplicators. Canon and Ricoh has begun to cause significant are expected to enter this area.

The third area, the low and coated paper copiers. Although medium-speed plain paper coeted paper copiers start be-



Mr Roger Leeks, marketing director of Kodak, reports "a very encouraging number of installations" for the recently-launched Ektaprint 165 AF plain paper copier-duplicator. The equipment may be bought or rented

contenders. European competi- £1,000 at tors include Oce, Gestetner, Alcatel. Olympia, and Rank Xeroxalthough some machines are Japanese-made.

Japanese inclode Caron Ricoh, Minolta, U-Bix, Toshiba, Sharp, Mita (sold variously as Mita, Gesteiner, Oce Imperial and Olivetti), and Cybernet (sold as Decimo, Hermes Facit and Rooso).

Very broadly, the market can be divided into two: on one hand, there are large organisations which will have number of small machines distributed about a building as well as e large fast copier for long runs of high quality for reports. Copier salesmen argue that distributed small copiers save time as they are near at haod and reduce queuing. Office managers say it encourages the range plain paper coplers staff to make too many copies.

The second major market

It is in this area where, per-

copier, is the front line of com- low £100—such as 3M's Scotch

petition and there is a host of copier - prices can go up to possible to buy a plain paper in copier prices is the forced

Coated paper, or "electrostatic 'copiers have a number of disadvantages. The quality of reproduction is often poor, the feel is slightly unpleasant such that is often suggested — by plain paper copier salesmen that they can only be used internally within a company. The cost of tha paper is significantly higher than that for plain paper copiars and they can only with fairly volumes of copies.

Withdrawals

It is generally acknowledged in the industry that the coated paper copier is at the end of its life with precious few new models in the last 18 months and several withdrawals from market. Nevertheless, there is expected to be a demand at the low end of the range for a very cheap copier used only for

Finally, there is the stencil duplicator-vary cheap, even if slightly messy end troublesome which has been long out-stripped by the photocopier.
 The British company, Gesterner,

changes in selling methods. While one day it may be economic to employ a salesman, complate with company car, driving round to clients the next day he has become the largest cost item in the product as the price tumbles.

It is a problem felt most keenly by Rank Xerox which grew with a monopoly in plain paper copiers and high prices. Faced with Japanese competi-tion, using dealers' services inof costly direct sales forces, Rank Xerox has had to reduce its own staff and find new ways of selling.

These include sales by tele phone, setting up of retail stores (both in the U.S. and the UK) and even selling by mail order, which not so long ago would have been unthinkable.

One aspect of Japanese com petition which cannot make the Xerox manegement sleep any easler is its gradual move up market. Canon, for instance, has a copier in Japan which is faster than the top of the range Xerox although it is less sophis-

The market for copiers looks tion of its sales in stencil set to keep oo going and cusduplicators.

Although criticised for being slow to realise the impact of copiers oo its business, Gestelner has been successfully help the much vaunted paperselling a plaio paper copier of less office, there is a move to less office. its own for several years which wards "intelligent copiers," is made by Rex Rotary, its which can reproduce informa-Danish subsidiary ecquired in tion stored in a computer or

OCRs and OMRs are now moving into new territory

Data processing developments

IN THE general data processing input devices for the word pro-environment, if a printed or cessing system. This might well typed document of some kind save soma money since type-already exists and the computer writers are a great deal cheaper then that visual display terminals.

Furthermore, the typist does not have to he the world's best at a screen can be used to correct terminals. needs it for some purpose, then are basically alternative procedures. Either an operator sits at a keyboard, reads the material errors or improve the format

and keys it into the system or, osing the original author's marked up copy draft. what is more likely if the throughput jusuifies it, the system employs optical character recognition, OCR, to do the same job at much higher speeds. The word processing system operator is thus left free to edit quickly the copy on screeo For many years, OCR has figured mostly in banking and to meet the author's corrections and priot out the imished copy for approval,

Ao loteresting idea stemming from the word processing application is for the preparation of telex mesages. There are already, "electronic ways of doing this and in any case new telex machines are coming on to the market for the purpose: using screen-based approaches. Howaver, if the OCR reader is already in the office then as with word processing the message can be typed on an ordinary machina and fed into the OCR unit. It is technically only a short step to convert the result to telex code and the Mitsul machine will do

Characters scanned

Technically, tha process of optically reading what is present on the surface of the paper is not too difficult with modern electro-optics. In most cases arrays of tiny photocells are used to scan the characters line by line; changes from black to white at character edges become signals. The bigger problem is to datemine, from the signals, what each character

Thus, early OCR could only tions in which WP termioals of the kind seen at the bottom can be tied up keying in long of cheques. But as processing consting documents from other power has become cheapar and

of machines that can cope with abla to schedule manufacture hand-printed capital letters. At more quickly. Another manuthe moment, continuous band- facturer uses them to collect writing is too much even for quality control information the latest computers to convert to a reliable stream of digital signals.

But the two or threa words of a signeture can be recognised sufficiently to say that the man who wrote it rather than a forger. Recognition, in the case of a machine recently designed by Transaction Security of Guildford, is as much dependent on how the words ara written as it is on what is written.

As the writer's pen moves, its position is digitised at frequent intervals. But both the geo-metric and the rhythmic pro-perties of the signature are extracted and reduced to a unique and personal sequence of numbers which can be encoded on to a say, a credit card or an identity eard. Thus when the card owner is trying to obtain cash or gat into premises, if the number derived from the on-the sant alguature does not tally with what is on the card, he can proceed no further.

In offices coocerned with like stock control, delivery schedules, quality control reports, sales orders or insuranca premium collections, OMR has a lot to offer.

Instead of a keying operation using order forms, shop floor reports or other pieces of paper filled out at the source of the data, the originator of the data himself makes marks in boxes on a form that the computer can immediately read. The forms up to A4 in size, can be read at about a yard a second into the computer, some 19,000 such documents an hour.

One of the UK's OMR proposome word processing installa- cope with formalisad characters nents, Data and Research Services of Milton Keynes, says that the car industry has taken much interest in OMR. One big company asks its distributors to fill up such forms as official orders. They are sent through the post to the maker Today, there are e number who, via the computers, is then

from tha shop floor.

Data Recognition is a leading UK OMR company and has, for example, provided equip-ment to food wholesalers who use the forms to collect orders. There is oo doubt, bowever, that in terms of activity and capital expenditure on OCR equipment, tha banks and other financial institutions are out in

Six passes

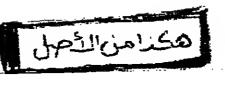
banks have had sorting halls full of 20-pocket cheque sorters, allowing all the necessary sortion to be done over-oight in as little as six passes. IBM, Burroughs, NCR and others are all involved and Britain's main maker in this field is OCR Scandata Scandata'a latest offering is

the 2280, an advanced machine that is able to scan documents like cheques at up to 30,000/hr and A4 pages of text at 4,000/ More documents can be loaded while the machine is scanning. Characters which fail to be recognised are handled simultaneously with the scanning by a special workstation which permits reentry of non-recognised characters from a video image displayed on a VDU.

Most of these developments are concerned with cost effec tive high speed throughput. Recently machines have Recently appeared that will process the "turn-around" payment documents used by the otilities local authorities, insurance companies and others, at the same time on one machine-dubbed "one step remittance processing.' Interbank credits will prob-

ably also be dealt with hy OCR and Scandata has already installed two machines for Barclays

Geoffrey Charlish



You've never seen a word processor like Dual Display. A full screen shows 66 lines of 102 characters per line exactly as they will be printed, with bold type, justification and proportional spacing, but without any confusing codes or prompts.

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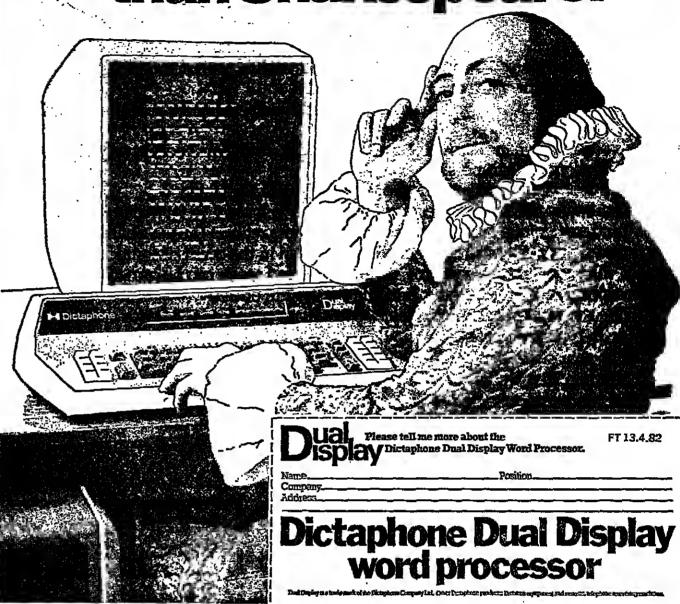
Dual Display permits editing and printing while the poessor is performing other functions such as sorting. manication or mailing.

With specialised accounting software, Dual Display comes a powerful multi-function processor, handling invoicing, wages and book-keeping, for example.

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THE ELECTRONIC OFFICE XIV

Dramatic changes are under way in the U.S. computer industry

U.S. suppliers aim to put a computer on every desk

Word processors

Small business computers

Desktop computers

Small business computers

Desktop computers

than the more mature mini-

computer and mainframe sup-

Convergent

comments Robert

100 Shillonpera

Volume (1.000 units):

THE GROWING U.S. MARKETS

Value of office automation equipment markets in \$m, based on shipments

. 1979

1.000

1,474

3,014

241

Information Technology Market Summary of

jörldwide Armual Shipm

1487. | 15:3% | 79% | 10% | 34-7% | 14-8% |

Constant 1980 prices

1.200

1.992

63

1985 104-7

1980

1,169

93

1981

1,609

129

987

1987

2,045

9,534

170

144

OFFICE AUTOMATION used to mean copiers, electric typewriters and a big computer hidden away in its own clean

Today, the picture is changing dramatically. The mainframe computer is being widely replaced-or supplemented—by a collection of smaller computers. Word processors are supplanting the old fashioned typewriter, and printers, electronic filing systems and electronic mail systems and taking over tasks of producing, storing and distributing documents.

By the end of the 1980s, vir-tually all office workers, managers and executives will have agers and executives with nave access to computers. Industry estimates suggest that in the U.S., there will be approximately 10m desk-top computers by 1985, representing a total value of more than \$250n.

Like it or not, the "office of the future" is on its way and for many in the U.S. it has already arrived. The goal of U.S. office equipment suppliers is to put a computer on every desk, and nobody seems to doubt that they will do it. The most important trend in

office automation is towards distributed computing—groups of small computers, rather than a single centralised system. Microcomputers are becoming

powerful enough to do many of the jobs that only the big mainframe systems could do

Built around microprocessors, these systems offer cheap computing power, so cheap, in fact that businesses are buying them in huge volumes. Sales of small computers—personal pnters, word processors, desktop computers and minicomputers will total some \$40bn by 1985,

up from \$11bn in 1980. The changing pattern of business computing will have enormous repercussions in the U.S. computer industry. Those that adapt will prosper, and those that do not are in for hard times, warn industry analysts. Already, signs of the upset

are emerging on the balance-sheets of some of the bestknown computer manufacturers. Earnings of major computer manufacturers such as Sperry, Burroughs and NCR bave dramatically declined, and even IBM's growth rate has slowed Minicomputer manufacturers

such as Digital Equipment Cor-poration and Hewlett Packard have faired much better. HP entered the office com-

puter market just a year ago with a series of products that support the concept of the "interactive office." This month HP will introduce in the U.S. an electronic mail system for users of its HP 3000 minicom-HP mail will allow messages

to be passed from one terminal to another around an office, or to another matching computer in a remote location. But even the minicomputer

makers are threatened by a new generation of microcomputer builders. Within three years, microcomputer-based systems that perform as well as or better than today's minicomputer will be available for one-fifth to one-tenth of the price, according to Gnestic Concepts. a California market study

group.
Minicomputer makers will be forced to move up to higher performance-level machines in office use around their own order to survive. Gnostic pre-

"The microcomputer indus- Networking try has been far more aggressive in using new technology

desk top computers is accepted, then the next step is to make these machines talk to each other, and to allow them to Wickham, vice-president of Vector Graphics, a California microcomputer manufacturer. expensive peripheral devices like printers or large data storage systems. Several of the established

The answer is the "local area network"—a cable connames in business computers have recently made moves to incorporate the microcomputer in their products. NCR, Burroughs and Savin have all signed deals with one of the most successful new microcomputer manufacturers Technology, Santa Clara, California.

Convergent is supplying the Several different minicomputer companies with "workstations" - advanced personal computers built around standard Intel microprocessors. The Convergent hardware has formed the basis of these companies' moves into the microprocessor era. IBM has also made its move

into microcomputers. year, the company introduced its personal computer-built around the same Intel microssor used by Convergent technology. The computer giant has apparently been taken by surprise by the enor-mous demand for this small dustry standard. So far, Ethernet, which is sponsored by Dec and Intel, as low-cost system sold through retail sbops. Customers now face a wait of several months

after placing their order for a "Baby Blue." Winners in the growth of small business computers built around microprocessors also likely to include the top personal computer makers-Tandy and Apple, whose most advanced products fit into the low end of the business com-

puter market. Another new factor in the market are chip makers like Intel and Zilog, both of whom are now building machines for

Once the conversion to small

necting each of the pieces of computer equipment in an office building. To enable a diversity of machines to communicate with one another is a highly complex problem, and one that is occupying the energies of most U.S. computer manufacturers today.

have been proposed by various companies. Leading the field are Xerox, with Ethernet, and Wang Laboratories with Wang-Each uses a totally different approach. Ethernet is a "baseband" system which Ethernet uses a single channel to pass data from one machine to

Wangnet uses multiple channels but can handle video and voice communication as well as data communications. The proponents of each argue that theirs should become the in-

well as Xerox, has most sup-port although a decision by the standards committee of the U.S. Institute of Electrical and Electronics Engineers to set a slightly different standard for local area networks bas been a major blow for Ethernet causing companies such as Hewlett Packard to drop its support for

IBM recently revealed that it, ton, is soon to introduce a local area networking scheme.

At a technical conference in the U.S., IBM engineers described a baseband system that may be offered for linking IBM

the U.S. office automation market is towards include managers and professionals in the use of personal computers.

Managers, it seems, are less ready, or able, to spend the

Average yearly ; rate of change

1978-1982 -

161

27.7

33.4

50.1

Professional

workstations

time needed to learn how to use complicated word processing and data analysis programs than are their clerical helpers. Machines for professionals are therefore expected to incor-porate highly advanced features that make them more "user Among the first "executive

workstations" on the market is the highly acclaimed Xerox "Star." This machine has a simple control mechanism called a mouse that can be moved around on the desk top to direct a pointer on the screen. The user selects the function he wants by pointing to one of a series of symbols on the screen and simply presses a button to make it happen.

Expected soon from Xerox and other manufacturers such as Apple and Digital Equipment Corporation are even smarter microcomputer systems that can carry on several tasks simultaneously.

He might, for example, print a file, enter information into a data base and receive electronic port, all at the same time.

7

Such systems, the manufacturers argue, increase the pro-ductivity of expensive managers and professionals.

The question remains whether they will be easily accepted. not want to learn how to type and will therefore shy away from keyboard machines. This may well be relevant in the UK but is far less so in the U.S., where any college graduate will have picked up

the skill. Perhaps the biggest attraction of a personal computer for the professional will be its communications capabilities, Linked to a telephone line, the microcomputer becomes an electronic mailbox, capable of sending and receiving messages from the next office, or around the world.

In the end, it may come down to a question of which is the biggest status symbol—a secretary or a personal computer. There is no doubt that in the very near future, the computer will be cheaper.

Some producers in the West face severe challenges

Japanese make rapid advances

Japanese-made products have become an increasingly familiar sight in Western offices. Indeed become an increasingly familiar now mostly for use as self-sight in Western offices, Indeed. contained "stand - alone" their penetration has increased so rapidly that Japanesa manufacturers can now claim to Western customer bases and contained selections of selections of selections as a serior property of selections of selections as a serior property of selections as a serior property of selections and selections as a serior property of selections as a serior property of selections as a selection of selection of selections as a selection of selection of selections as a selection of selection of selections and selections as a selection of selection of selection of selection of selections as a selection of select facturers can now claim to dominate sales of some types of particularly at the lower end of the price scala.

In low-cost copiers, for example, the traditional position of Xerox and its international subsidiary, Rank Kerox, has been under increasingly severe challenge from manufacturers like, Oki, Canon and Ricoh. Canon already, claims to have captured the biggest share of the U.S. market, where it is ranging from semiconductors to the U.S. market, where it is ranging from semiconductors to selling 100,000 machines a year. large computers, private branch exchanges (PABXs) and transitself in inexpensive computer mission equipment. These companies have an sonal computers, with Japan holding an estimated 75 per cent of the American market.

cent of the American market.

Japanese companies have won a similar share of U.S. sales of high-speed facsimile machines.

These trends have partly been encouraged by U.S. office to provide a comprehensive range of integrated systems to construct the symbol-ised this strength in Its slogsn to provide a comprehensive range of integrated systems to construct the systems and communications. equipment manufacturers. Unable or unwilling to produce themselves all the products which they want to sell, they offices to huge organisations have looked to the Japanese to snpply them. Even International Business Machines, once firmly committed to sell-unable or information between many different locations. ing only its own equipment, markets under its label copiers

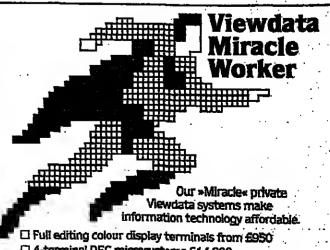
manufactured by Minolta.

sales forces as a springboard, they aim to develop during this decade from manufacturers of office automation prodocts into suppliers of communicating information processing equipment. ment. Several of the bigger companies already have many of the components needed. Fujitsu, Hitachi and Nippon Electric all have vertically-integrated product structures

Other companies are focusing Now many Japanese manu- their approach on a narrower facturers are working on target. Matsushita, best known

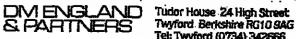
DURING THE past five years, strategies to link their products for consumer electronics, is which consists of more than Japanese-made products have — which have been sold until developing integrated systems 10,000 intricate characters. developing integrated systems 10,000 intricate characters for handling graphics and text. Though Japanese typewriters They combine facsimile, exist, they are cumbersome to copiers, small business com- use and can master only a puters and word processors.
Facsimile has been a popular means of transmitting written information in Japan, because it avoided the need to print out mechanically the kanji alphabet,

CONTINUED ON NEXT PAGE



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offered extends from the most inexpensive, reliable and well-proven HF 1048, through to the HF 2040 and the auto-receive HF 2050. The last two feature high quality inkine last two reautre night quality ink-jet printing, using plain paper, at less than 2p a sheet, which really pegs operating costs. Since they'll also transmit fractional pages, you don't have to pay for blank space either. All the above are CCITT group 2 machines. But if you're into really heavy traffic, there's the ultraadvanced desk top HF 2060 group 3 machine that can break the one minute barrier for you with the same sort of round-the-clock reliability and copy clarity.

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The Government is putting up half the money for the project, says Guy de Jonquieres

£1m drive to promote office technology

THIS YEAR an unsuspecting, found that only one in 10 small and by all accounts largely businesses (defined as those ignorant, British public is being employing less than 200 people) exposed to a film campaign uses a microcomputer. Usage intended to promote awareness was found to be markedly of information technology. The higher in service industries industry Department, which is than among manufacturing putting up half the money, companies.

hopes the project will bring home the far-reaching implication is a prime candidate for office tions of the convergence of automation. But equipment computer and communications. Hike word processors bas been ubiquitous microchip.

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series of initiatives launched by agreement with the main civil Mr Kenneth Baker tha Department's energetic Minister for use of new office technology Information Technology. to stimulate users to instal difficult negotiations. technologically-advanced equip-ment and to encourage British manufacturers to develop and

supply it.

There is certainly plenty of scope for more to be done in both areas. Precise information about the extent of office auto- tronic office instantations—one mation in Britain is scarce, but of them in the Cabinet Office mation in Britain is scarce, but of them in the Cabinet Office mation in Britain is scarce, but of them in the Cabinet Office mation in Britain is scarce, but of them in the Cabinet Office mation in the cabinet of the cabin from the evidence available it appears that the UK lags behind some other industrialised countries, notably the U.S. and

A study published last year by Industrial Market Research found that only 3 per cent of business and government estab-lishments used word processors. 9 per cent had computers and 2 of office technology will also concentrated in bigger estab-

By the Marketing Department microcomputers in schools and sof the University of Lancaster, support for the promotion of

technology and the role of the ubiquitous microchip.

The campaign is one of a trial—in Whitehall. Reaching the campaign is one of a trial—in Whitehall. Reaching the campaign is one of a trial—in Whitehall. Reaching the campaign is one of a trial—in Whitehall. has required protracted and

> The number of government initiatives aimed specifically at stimulating greater public interest in office automation is relatively small. They include the sponsorship of pilot electronic office installations—one office system trials and several spearhead projects being carried out to test the applicabeing tion of innovative technology.
> One of these is a trial of a system which allows direct bandwritten input ioto a machine.

It is boped that the spread per cent facsimile machines be accelerated by a number of Moreover, much of the more other Industry Department sophisticated equipment was programmes. These include concentrated in higger establishments.

The accelerated by a number of the more other industry Department of the industry Depa Another survey, carried out puter techniques, installing

telecommunications indus- action. monopoly and allowing private suppliers to compete, it will encourage the commercial introduction of a wide range of innovative products and ser-

Far-reaching

The major beneficiaries of the least. Not only do their requirements for sophisticated services far exceed those of the ordinary householder, but they are also able to pay more for them.

Merchant Bank and British Petroleum has started work on an independent communications system, Mercury, which aims to compete with British Telecom in providing premium communications to large companies. Mercury will enter operation in the City of London later this year and spread to the rest of the country by 1984.

Undoubtedly the most far- plans to carry high-speed data and accused supplier companies word processor designed for it reaching measure which the communications and video of taking too completent a view by Logica, a leading British Government has taken so far, conferencing. The challenge of foreign competition, particular computer systams house. By however, is the liberalisation of has stung British Telecom into larly Japan. There were the time the machine became try. It hopes that by relaxing accelerated the modernisation panies with the aggressiveness, had cut their prices sharply British Telecom's traditional of its national oetwork, intromonopoly and allowing private duced new digital circuits and suppliers to compete, it will launched services like electronic make a real dent on the world achieved. mail. It also plans to start market. direct satellite communications in about two years' time.

demand for electrooic office systems and products will be met by British suppliers? A somewhat gloomy prognosis was new policy, which was set in offered last August in a study motion last October, are carried out by the Pactel coocarried out by the Pactel coo-sultancy at the request of the expected to be business users—sultancy at the request of the for the foreseeable future at National Enterprise Board, part of the British Technology

forecast doubling of the world market for information technology pro-A consortium formed by ducts to £105bn between 1980 Cable and Wireless, Barclays and 1985. But it warned that ducts to £105bp between 1980 Britain, which accounts for six per cent of the total, was supplying only 50 per cent of its own needs. By 1990 the proportion would fall to 35 per ceot, proneeds. By 1990 the proportion immensely powerful computer would fall to 35 per cent, prodeveloped by an affiliate of ducing a trade deficit of £1bn Exxon of the U.S., which Nexos np from £300m × 1980.

the key elements of office automation such as production of bad luck. It was dogged by

of taking too complacent a view by Logica, a leading British It has recently scarcely any British-owned com- available other manufacturers

The difficulties which can beset an attempt to break into But how much of the future the office automation market were noderlined late last year hy the collapse of Nexos. The company had been set up by the NEB three years before to supply a range of advanced office systems. But it never managed to establish itself, in spite of investments by the NEB totalling £30m.

Some critics have argued that tecboologically to sophisticated and often untested equipment in competition with powerful giants like IBM and Xerox. One of its more glamorous products was an wanted to use as the nerve The report said that British centre of an integrated office. industry was weak in many of But it never took a single order. Nexos was also a victim of May.

As well as voice, Mercury word processors and copiers delays in the production of a

Outbid by ICL

Last summer the NEB negotiations Gesterner, the British copier, duplicator group, which was His strategy is based on the principle of a fully "netinterested in acquiring rights to the word processor. Gestetner saw this as a way to principle of a fully "net-worked" product line in which move into electronic systems all equipment, from small desk-top terminals to large main-frame computers will be defrom its base in older, mechanical technology. But it fron was outbid at the last minute Nexos set its sights too high in by ICL, Britain's biggest the first place. It was aiming computer manufacturer, which also needed a word processor to flesh out its product line.

necessary products quickly and at the least possible develop-ment costs, ICL has had to look The improvement in ICL's fortunes over the past year has to deals with several other comheen one of the brighter spots in Britaio's high-technology panies, mainly overseas. These included an agreement under industry. After hovering on the brink of financial collapse for several months, it has which Fujitsu of Japan will supply ICL with chip tech-nology and very big computers emharked on an energetic which compete directly with recovery programme under the 1BM machines. new management installed last

As well as retaining ICL's ments with Mitcl of Caoada, to in Britain.



traditional commitment to big

computers Mr Robb Wilmot, Its

new managing director, aims to expand significantly its role in

the office automatioo market.

signed to communicate elec-

tronically.

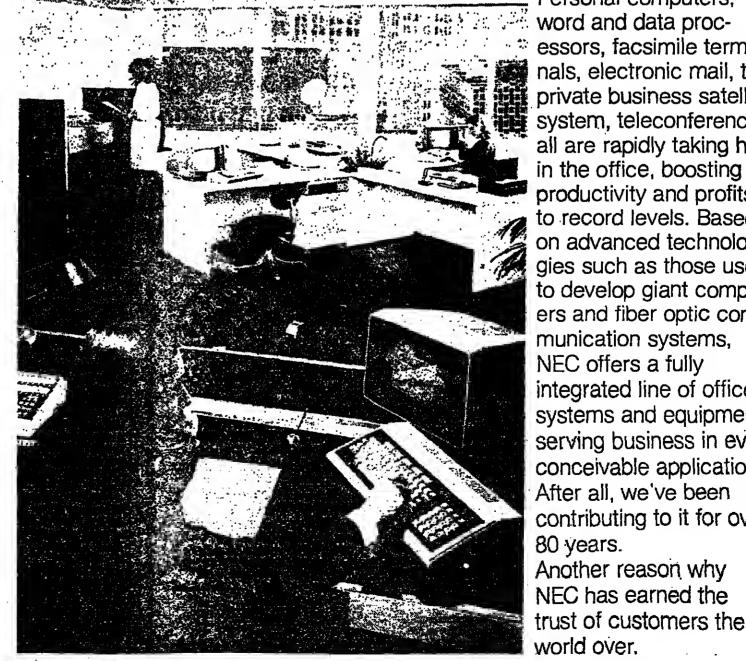
Mr Kenneth Baker, Britain's Minister for Information Technology, is launching a series of initiatives to encourage wider use advanced equipment in commerce and industry

market a private branch exchaoge (PBX); with Three Rivers of the U.S. to make and sell a powerful professional microcomputer; with Sinclair of the UK to develop an inexpensive desktop workstation and with RAIR, also a British company, to produce a persona! computer.

A number of other British-owned companies have recently taken steps to increase their iovolvement in the supply of office systems. They include Plessey, which is marketing a system designed around the under licence from Rolm of the U.S.; the General Electric Conpany, which is setting up a new office systems division; and Ferranti, which has established a joint venture with General Telephone of the U.S. to make telecommunications equipment

THE COMPUTER

sharpens your edge with automation.



Personal computers, word and data processors, facsimile terminals, electronic mail, the private business satellite system, teleconferenceall are rapidly taking hold in the office, boosting productivity and profits to record levels. Based on advanced technologies such as those used to develop giant computers and fiber optic communication systems, NEC offers a fully integrated line of office systems and equipment serving business in every conceivable application. After all, we've been contributing to it for over 80 years. Another reason why NEC has earned the

a. The five leading manufacturers of office automation equipment x in Japan account for about 40 per cent of the national production, E so that the degree of concentration is relatively low. b Key: † production; ‡ sales only; * production in preparation

. JAPANESE MANUFACTURERS

	Facsimile equipment	Office omputers	Personal computers	Japanese word processors
Integrated electrical machinery manufacturers Hitachi Ltd. Toshiba Mitsubishi Electric	* *	+	;	* *
Communications equipment manufacturers Nippon Electric Pujitsu Oki Electric	* *	* *	*	* *
Home appliances manufacturers Matsushita group Sharp Sanyo Electric		*	34 ** **********************************	. ‡
Office equipment manufacturers Ricoh	‡	† †	- +	† †
Subsidiaries of foreign enterprises Nippon Univac Nippon NCR Nippon Olivetti	<u>+</u>	* * *	*	* -
Source: Full Bank Bull	etin, 1982.			

Rapid advances

CONTINUED FROM PREVIOUS PAGE

ably well.
Though Western companies still have much more experience in designing word pro-cessors, some Japianese manufacturers believe that the research needed to overcome the complexities of their own national language will enable: them to develop still more advanced machines for markets in the U.S. and Europe.

Japan is also devoting a con-siderable effort to research and development on systems which can recognise patterns and res-pond to spoken instructions. Several companies are already marketing devices which can identify a limited range of commands spoken by a number of different people or a wider vocability spoken by one individual. The machines are used for tasks like checking inventories and sorting mail.

The Ministry of International Trade and Industry hopes to give research in these fields a major boost through its programme to develop a Fifth Generation Computer. The 10-rest project is intended to result in a prototype machine which can be easily used by imwhich can be easily used by untrained operators and will have limited powers of reasoning.

Collaboration

The Ministry, which will conduct the project in close collaboration with a group of Japanese electronics companies, believes that it will open the way for a new generation of machines which can carry out medical consultations, perform. automatic language translations and print out dictated text. Though some Western experts doubt whether these goals can be achieved in the 10 years envisaged, many think that Japan will gain much useful

experience in the process. Japanese . industry's . proven success in volume manufacturing of keenly-priced office products will be a powerful advantage in its strategy to graduate towards more complex information systems. But it must also overcome some important handicaps if it is to compete effectively on international markets against such tiants as IBM, Xerox and

Telephone

Telegraph One of these is that domestic demand in Japan for sophisti-cated office Integration is developing relatively slowly. Indeed, the pattern of work in most Japanese offices is very different from those in

Because of the complexities of the kanji alphabet, for example, printed or type-written correspondence is rare. Even in big companies, most internal memoranda are written out long-hand and photo-copied if more than one copy needed.

But successful integrated information systems will be built around software, or programming, which closely reflects the requirements of users. To try to maet this requirement, many Japanese companies are stepping up sharply recruitment of programmers and systems designers and in some cases are setting up their own software centres in the west.

Another hurdle is distribu tion and maintenance. Though Japanese manufacturers have beeo immensely successful at marketing lower-price products internationally, the distribution channels which they use often

vary from product to product. With stand-alone equipment, sold on a one-off basis, this does not matter. But customers investing in integrated systems will want to be able to procure all their needs from a single

Equally, large systems will require many more highly-skilled engineers to service and maintain them. That will mean making a substantial investment in manpower if Japan's reputation for efficiency and reliability in less expensive equipment is to be retained in the fully electronic office of the

future. Japanese companies already possess most of the building bricks needed to construct a highly competitive strategy for the integrated office of the future. It should become clear within the next few years how adept they are at designing the architecture and making the cement which will hind

whole edifice together. Guy de Jonquieres

Olivetti's three routes to office automation

THE OFFICE of the future is the office of the present. There is not going to be a revolution when the customer suddenly throws everything he's got ont of the window and orders afresh—the customer will arrive at the automated office by a process of evolution. This is the view of Sig Franco

Agóstinucci, manager of Oliretti's word processing and office automation division. In the past six months Olivetti has begun iostailing fully automated offices for a number of large Italian concerns, including Fiat webs of minicomputers, electronic typewriters, word processors, terminals and telecommunications equipment. But despite its novely the automated office is inevitably just the cul-mination of past developments.

Olivetti is the biggest maker of office and data processing equipment in Europe and the sixth biggest in the world. Though it is one of the leading private sector companies in Italy, only about 35 per cent of its group turnover (which in 1981 reached L2.887bn—\$2.2bn) arises in Italy, and nearly half its 53.000 employees work out-

Traditionally, Olivetti has been known for its typewriters other office equipment, though it bas long been involved in data processing and until the early 1960s was making large computers. But in the past few years two processes bare been at work: first, sales of Olivetti's data processiog equipment-which include word processors, personal minicomputers, accounting and business systems, telecommunications equipment and terminals-bave expanded so that in 1980 they accounted for well over half group turnover.

Secoodly. Olivetti was the first company in the world to introduce the electronic type-writer, which in 1980 accounted or 8 per cent of group sales. The result is that for Olivetti the gap between office and data processing equipment is becoming more blurred, and another consequence is that the traditional mechanical or electromechanical Olivetti typewriters will gradually go, ont of pro-ductioo, as they already have in

Though in 1980 they still crounted for a robust 24 per rent of group sales the fact that they have about ten times as parts as machines makes cheaper to manufacture in terms of manpower.

some plants.

processing cent: Word processing systems 5.3 Personal minicomputer 3.5 Accounting and business systems Telecommunications equipment .

GROUP PRODUCTS

Terminal and data entry Total lectronic typewriters ... products TDEWTiters

Information

Cash registers Grand total100.0 modern office automation than other European office equipment

makers like Triumph Adler and Olympia. Instead, its rivals are other data processing equip-ment makers (IBM with its strong presence in office products as well is an obvious one) and lately the big telecommuni-For the dividing lines between machines for office,

data processing and telecommunications use are becoming blurred and the machines themselves can increasingly be used for more than one function. Since many of the components are the same, the real competi-tion between the office automaas devising the most convenient links (or interfaces) between the different components, and making the machines easy and pleasant to use.
At least in Italy, Olivetti

claims to be able to approach office automation from all three poles-from its bases in office products, data processing, as well as telecommunications.

"It's difficult to sell the global system approach," says Sig Agostinucci. "It's better to build on what the customer already has. The large customer who wants to buy new equip-ment will know all about office automation and what the office of the future is all about." In most world markets

Olivetti's strengths are in Latin America. Australia and so on - Olivetti starts from the office equipment base. It envisages building up systems commencing with the electronic typewriter, ascending through memory electronic typewriters to display word processors, and on via communications systems to electronic storage and clusters termioals.

A secretary sitting at ber electronic typrewriter can ask the computer what electronic mail there is for her that day, and the computer can then send her the messages in the order she wants them. She cau despatch a telex message to another company ordering, say, spare parts, going via the voice private business exchange (PBX) and minicomputer to the telex machines, and the computer will simultaneously store her request and send a copy of it to the company purchasing depart-

The data processing approach applies particularly to organisations like banks which already have Olivetti business systems it is rather the reverse of the office equipment approach.

The starting point is more likely to be a computer and related terminals, to which ace now to be appended word processors and electronic typewriters, and so on.

Olivetti is strong in bank automation-systems that connect the counter (automatic teller machines) with the back office functions. As well as its bome base of Ital, where about three-quarters of all automated banks have Olivetti terminals. the Italian company has a strong presence in Australia, in the Japaoese rural bank sector (recently) in Deomark and else-

Strong sales

Olivetti has not traditionally been very strong in telecommunications, which accounted for only 6 per cent of group sales in 1980. It makes teleprinters and message switching equipment, for both of which has strong sales in Italy and in certain other countries, like Austria and some states in the Middle East. It also sells voice business exchanges (PBX) under licence from Northern Telecom and is to start manufacturing them under

Only in Italy can it start from the telecommunications base: in other countries it has come up against the fact that most states against the lact that most states of the lacturers for telecommunication the U.S. ATM market—the U.S. tlons equipment and PT connections, while even in Ital the future structure of the telecommunications industry and the systems bave yet to be Nevertheless, Olivetti is de-

the new advanced system the lines for which are being insystems. Olivetti ls in a far ultimately be a minicomputer teletext will allow machines like stronger position to compete in (magnetic storage), with a voice word processers and electronic

machines in other places out going through the mails of a telex — thus giving modern office instant munications.

For small companies ploying 100 people or Olivelti's approach is most all to be via the business system. may olready have installed; computer for handling payres and other administrative mat ters. This is one of Olivents stronger fields, in view of its absence until recently from the large computer market (it now licence). It can hulld onto the base of small business computer by installing multiple keyboard machines for data entry and

access mail, and so on. The story of Olivettl's re-covery from being an unprofitable, overstaffed and heavily lp. debted company in the second half of the 1970s to the leaner, profitable and almost negligible indebted company of today la becoming well known as a texthook for the recovery of the large Italian company.

It was due to the arrival of Sig Carlo de Benedetti as chief executive in 1978, the changes he nushed through and the coincidence of the fact that the company was then ready to launch its electronic typewriter, whose sales have grown so fast (in the first half of 1981 they amounted to 20 per cent of the turnover of the more electronically oriented parent company, Ing. C. Olivetti).

The parent company in 1981 made profils of Lire 87.8bn on turnover of lire 1,362bn. o profit Increase of 75 per cent.

The other aspect of its growth has been a steady series of ocauisitions both in the U.S. and Europe, In 1981, Olivetti took a controlling stake in Hermes, the Swiss office equipment maker. and in West German subsidiary. Data Terminal Systems, which contributed to group sales in the serond half of last year. It also took a 23 per cent stake in Docutel, the U.S. manufacturer of automatic teller machines for banks, and in Syntrex. o. U.S.

Ollvetti is making use of market in general has been disappointing for Olivetti in the

Another aim of this and other acquisitions of small companies is to obtain rapid access to know-how which it would take veloping a teletext machine, for a year or two to acquire on its own. The policy is considered essential to mainlain a technostalled in several European logical lead in many fields in a

James Buxton

Industry is now showing willingness to accept change

France strives to catch up

over the past few years as the notion of the paperless, all-electronic office. But according to most market studies, the country remains slightly behind most of its Western partners in the application of these systems, firmly wedded to the red tape that has given French bureaucracy such a fearsome reputation.

This tardiness in accepting change has, until now, tended to count against French industry. In virtually all the main sectors of this extremely frag-mented market, France is reckoned to run a balance of payments deficit. Hence the concern of successive French governments to galvanise industry into action — an attitude which began to produce results in the latter days of the last

The outstanding example of this change was the move by Saint Gobain to link with both Cii Honeywell Bull, the Franco-American computer group, and Olivetti, the Italian typewriter company. Saint Gobain's idea was to form a broadly-based office equipment supplier which would draw strength both from Olivetti's know-how in word processing production and from Ch's computer-hased office peri-

pherals systems.

Matra, the missiles and high technology group, has similarly tried to build on its competence in using micro-circuitry to move into terminal equipment

manufacturing.
Yet both of these examples fall outside the mainstream of the French strategy. In three other big companies—CIT-Alcatel, Thomson-CSF and Jeumont Schneider—this is based on a controlled expansion from their base in telephone switching systems.

In this field, at least, French

in its home market and is these companies is therefore to foreign companies. add a range of compatible For examples, in the copier of around FFr 33m in 1980, are peripherals around their private field, there is no significant still not widely used. The estitlephone exchaoge systems. French manufacturer among mated installations in 1980.

of Friden, the automated mailing concern, in the U.S., expanding its international base through the acquisition of Roneo in the UK. The company believes the latter deal is particularly important in giving it the commercial net-work which is a highly significant, but often overlooked, part of the office equipment industry, particularly on the servicing side.

20% of market

of mini-computers and office terminals. A terminal bas the main success of domestic been developed and already sold overseas, through a in the telex market, where the 35,000 order to GTE of the U.S., country runs a balance of payand it is also marketing a facsimile machine. In France it reckons to have about 20 per cent of the market in the mini-

of SECIE in the word procesindustry has a leading position slng and telecopier field.

reckoned to have the technological strength to carve out
a bealthy share of world sales.
The basic concept of all still heavily dominated by bowever, the fact remains that great deptb. It is reckoned

FEW SUBJECTS have gene- Ooce the company bas won an the top six according to a totalled about 6,000, although rated much paper in France order for the switching apparatement recent study. The plain paper it is reckoned this could grow order for the switching apparations, it is argued, it has the base on which to sell the rest worth a total of about years. Some experts believe of its range, from screens, to memories, to copiers.

Not all these companies have the full range of peripheral materials, though one of the objectives is to be able to some 21,000 within two worth a total of about years. Some experts believe for in 1980, was the telecopier market will dominated by Rank Xerox remain a specialist field, although at one time it was regarded as a cheap and easy materials, though one of the objectives is to be able to marry different equipment making great strides in the market is likely to develop in

> 1980, worth about FFr I.6bn ment of the market is expected about 64 per cent were to step up sales from about reckoned to be electric. At the FFr 350m in 1980 to FFr 800m same time, the electronic revo-lution is still only beginning, with 15,000 electronic machines in 1980, and 19,000 word pro-cessors—of which Olivetti, IBM and Cii-Honeywell Bull took the lion's share.

The new typewriting systems Thomson's development is are bowever, reaching takeover particularly based on integrated and interlinked information systems, spreading out from its switching systems into a range processors should quadruple over the next five years.

ments surplus, reckoned to amount to about FFr 100m in 1980. The strength of the computer field.

Similarly, Jeumont Schneider, a subsidiary of the Empain Schneider group, has branched out from its private exchange technology, where it is strong as CIT in the French market, through the takeover of SECIE in the word proces. telex industry is based mainly

relatively strong position in this sector, the telex bas not Despite these developments, penetrated the market to any that there are only about 100,000 installed machines in the country. Similarly, telecopiers, generating a turnover

objectives is to be able to marry different equipment through the switching system.

CIT-Alcatel bas probably gone the furthest with this process, developing a range of information screens, keyboards, telecopiers, and facsimile machines to go with its private exchanges. It bas moved into the so-called "back office" activities through the takeover of Friden, the automated mail. of almost 400,000 copiers of all types.

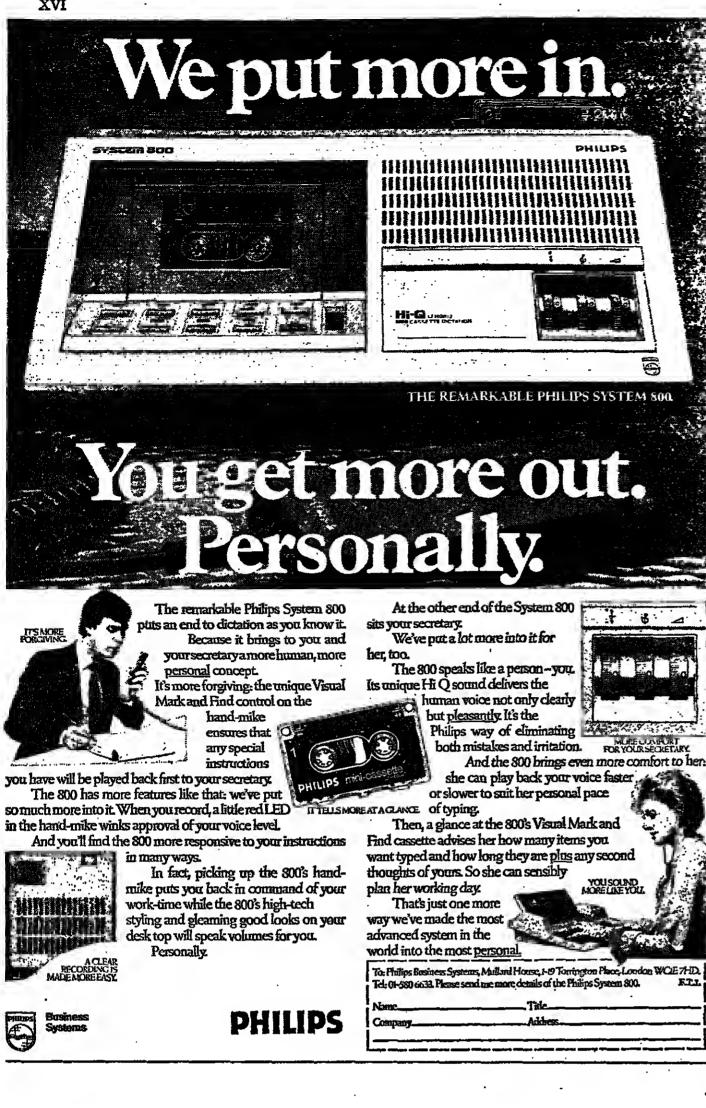
In a similar way, the types writer market, evolving with the change to electronic machines and word processors, is beavily dominated by foreign companies. Out of a total typewriting market of 2m units in 1980, worth about FFr 1.5bn reckoned to take np about 9 per cent of the working day of the average French office worker, average French office worker, that is largely controlled by foreign companies. At present fewer than a million of France's 6m office workers have access to milcrofilm or magnetic storage facilities. But the developin 1985.

A question

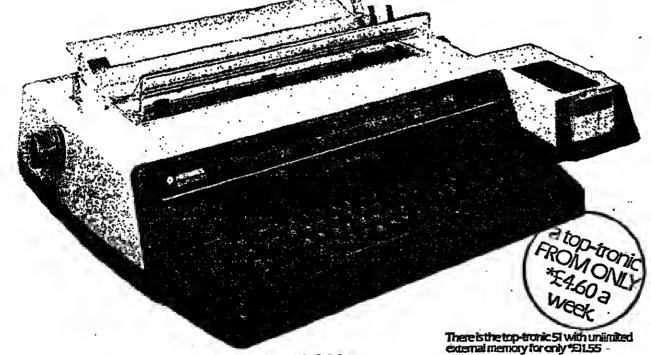
The overall value of the French market for the various types of office automation equipment remains a question of considerable argument between specialists—estimates vary between FFr 3.4bm in 1984 and FFr 8.5bm in 1985. What they are all agreed on is that it will remain one of the least developed markets in Europe despite a boom in the text pre-paration segment. France is expected to account for only 17 per cent of European sales, against 19.5 per cent in the UK and 25 per cent in West Germany in three years' time

Against this background, the new Socialist Government is expected to continue with the selective research aid programme inherited from the previous administration. But it is not yet clear exactly where the money will go. Virtually all the leading companies in this sector — including Olivetti-through its connection with Saint Gobain — are linked with the nationalised groups io one way of another. Hence the way of another. Hence the development of France's "bureautique" industry will to some extent depend on decisions taken about the organi-

sation of the State sector-Terry Dodsworth



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A Westinghouse open office word processing workstation. The total UK office furniture market is

Manufacturers of specialised furniture systems for the electronic office reach a turning point

Workstations of the future

"The office of the future

might be a realisable dream to-

scratch, with few budget restric-tions and the courage to face the daunting task of establishing new systems which take full advantage of available tech-

notogy.
"In effect, this is an unlikely

set of circumstances - and the

opportunity to create a purposedesigned administrative centre truly from scratch is a rare

Realistically, most office units still "grow like Topsies" rather

than in a planned way — changes in company organisa-

tion can bring about quite

dramatic re-groupings and changes in staff numbers, but

often old working methods con-

which remain static over long periods until a major re-

organisation is embarked on,

Once this decision is reached

companies are commonly faced with the situation of introducing automated systems and

information technology into existing buildings. Overcoming the inertia or negative reactions

to change, that we all experience as individuals and as a work force, is a problem which management must overcome

with true commitment, Equally, the environmental and

technical problems need just as much thought and consideration

- an aspect which is often overlooked by management as well as equipment suppliers.

Given the opportunity to plug your personal terminal, with its TV screen, into an automation network, "cable management" has now become an important

feature of all office re-organisa-

with traiking cables are available. Most of them have merit

but there is no one universally

By way of example, SPS have made a comparison between using a screen based furniture system to route services wiring

and a flexible flush floor trunkng system. In order to make a fair com-

would be provided at the perimeter and at central columns, and then the floor

would need to be carpeted Io the second, the floor screed would need to be dug up,

trunking laid, then a carpet

fitted with special cut-out traps to the services trunking. The costs of the two alterna-

tive methods of providing

services for an office floor of

5,750 sq ft, including carpeting

and contractors profits and

Perimeter and column trunk-

However, as it would be

necessary to provide a sophis-

ticated screenbased furniture

system in the second instance.

the comparative costs of refurnishing for 45 staff would

Screen-based furniture system:

In summary, therefore, the

tive would be between £85.000-

£90,000 where a large part of the investment is in the build-

ing. The total cost of the second

alternative would be between £90,000-£110,000 where the

majority of the investment is in

Michael Wiltshire

furniture:

ing: £20,000.

be, approximately:

Conventional

satisfactory system.

Various solutions for coping

comments Mr Henderson.

Planning

WHILE the major focus of the office of the electronic age office of the 1980s continues to still a good way off. be the advances in technology, many office furniture manufacturers are bemoaning the fact day for companies setting up and that their products are too often administrative unit from the Cinderella items of the office, with managers placing furniture on a low expenditure-

There are fresh indications, bowever, that suppliers—par-ticularly in the £37m systems furniture market—are uniting to create greater market awareness of furniture for the electronic work-station.

The National Business Equipment Survey says that united efforts by furniture suppliers in the past year suggest that a turning point has been reached, with individual companies combining muscle to make joint (as well as individual)

include "Designers' Saturday" in London, the setting up of the Contract Design Association and the coming "Workspace S2."

"The most constraining influence is the huilding itself and its physical arrangements which remain static events

G. A. Harvey, for example, is about to spend £250,000 on promoting its System One range, to be officially launched in

June. Mr John Sidwell, Harvey's managing director, says the company is "moving into a very professional area and our aim is to create a strong identity for Harvey end-users and archi-

Steelcase Strafor—the largest furniture manufacturer in the U.S., although a relative new-comer to the UK market—is doubling its p.r. investment and adopting a broad-based approach in terms of targets

The company will soon be launching several additions to its Series 9000 system, including a new European-designed and developed work-surface, as well as a wide range of electronic information work-stations, to be marketed as

Major efforts

A number of British manufacturers are meanwhile making determined efforts to introduce new office systems specifically designed to meet the demands of the electronic office—for example, Lucas Furniture Systems of London with its recently launched Programme

Two range.

Jean Davis of the National parison it is assumed that an office building of some 5,750 sq ft is in the process of being fitted out, and that, at present, there are no services laid on.

In the first system, services Business Equipment Survey says that systems suppliers (the larger, as well as the smaller) are also expanding the focus of their attention to include medium-sized contracts of 20 to

25 work-stations. The increasing maturity and growing competition of the systems market should make such a development both expected and welcome.

Herman Miller, which leads the field with a 32 per cent share of the UK market, is among those companies which may even be extending the systems furniture concept outside the office environment— "Action Factory" plan for light assembly engineering situations mainly distinct the state of the situations, mainly aiming for

computer manufacturing groups. Wang, for example, has installed around 150 Action Factory work-stations in their Southern Ireland base; and IBM are currently testing an Action Factory work-station in a variety of manufacturing

situations. Despite all the advances in £45,000-£50,000. information technology the average office environment in £70,000-£90,000. Britain is sadly lacking in overdesign-function requiretotal cost of the first alterna-

While suppliers vie with each other to sell their concept of the electronic office, some leading office planners question how ready the European market is for these advanced products.
Mr Roger Henderson, of Space Planning Services, suggests that, in reality, the truly automated

For centuries most people have been led to believe that there exists a minority of sages—priests, scholars and then

scientists—possessing deep theo-retical knowledge covering all important aspects of life. Our attitude has been that if we could not ourselves learn the sages' theories well enough to apply them directly, we could always go to the learned source and be told what and what not

Since the 1960s at teast, the sages have been seen increassages have been seen increasingly to have feet of clay. Few managers believe any longer that there are theories of management which can be learned and applied systematically and effectively. Teachers have ruefully discovered that there is no educational theory which can ensure that uninterested childensure that uninterested children learn mathematics.

The undermining of the past two decades looks likely to be turned into large-scale demolition by the development of the so-called electronic office and its repercussions on the majority of working lives. While there are sound

theories to guide the making improvement of word processing

THE VARIOUS human babits liable to be rudely shaken theory to tell us how to use instructions are unimportant. by the advance of technology, them sensibly. perbaps the least noticed is our

attitude to learning and knowavailable now, it cannot be tess natural wastage. true of the unforeseable advances which will he on the market in 1992.

> Introducing an electronic system into an office is a hit like sending everyone working there to a different company where they will need to learn how to behave appropriately in new conditions and with changed human relationships.

> In the absence of any theoretical sbort cut to learn-ing how to do that, the only course is to grow accustomed to the strange, multi-skilled but moronic newcomer and find out how to get on with it by

> Managers and staff bave to evotve their system of working as they go aloog, which means continuously observing what is happening, reviewing it criticand changing their viour accordingly. What behaviour accordingly. will make the difference between success and failure is still intelligence, but practical intelligence rather than the

systems and the like, there is no planning or of memorising tests beforehand and at regular schools which train people in 18, of course, more effective if A bit of forethought however

> cussions with staff intended to give them a broad apprecaition



of what the change implies are important about the changes something which cannot be started too soon, for the same deep fears among employees tend to be traised again and again regardless of bow often

they are refuted. One of the most common objections is that visual display screens injure people's eyes if oot their entire metaholism. There is appareotly no evidence that this is so generally. But since already defective sight may be made worse by watch-

intervals thereafter. Even "typing pool" staff How best to introduce and liable to error, can save a not specially these theories can be of anguish especially if it the time watching screens, and decided only by the particular enables most of the staff one group's training manager organisation concerned. Since savings permitted by the responds to the eyesight objection by asking if the person to be made gradually by tion by asking if the person to be made gradually by the similarly worried

television.

Michael Dixon highlights the complexities of teaching new skills in the computerised office

Important aspects of staff training

making it is similarly worried Presentations to and dis- about the effects of watching

Forethought is at least as



One of the most common objections is that visual display screens could injure people's eyes, if not their entire metabolism . . . but there is no evidence that this is so

the new system implies in who does what. Ostensibly the newcomer has a prewriter keyboard plus various extra keys which activate whole complex functions. What these produce can be far more directly useful to a manager than to his or her secretary or assistant.

Experience suggests that the effect is to change people's jobs. requiring executives to operate the system first hand fairly frequently—which is why pinintellectual kind, ing screens, staff likely to be striped gents are increasingly. That is not to say, of course, in froot of them for long seen tapping away for an hour that the intellectual skills of periods should be given eye or so daily at the various

keyboard skills. conducted under me guidance of At the same time staff someone else nineally more proformerly engaged almost entirely in secretarial work tend first introduced, the problem is to become more involved in that everyone in the effect is a analytical tasks on their beginner.

pecking orders formerly gave pride of place to the competence

gained by are and experience. If this possibility is anticipated and aired, the dangers can be

The best way of evercoming manager's behalf. They need.

perhaps, to know how to write the difficult seems to be to make a programme to produce specific use of the staff was truep the kinds of result, which in turn techniques most quickly in the role of supporting count offers to increases the importance among office workers of the intellectual their colleagues who are relaskill of deciding what informatively strug lime.

There is absolutely no subsequente for co-operative learning by tinn needs to and can be colled out of the electronic entrails. A further tendency which it intelligent practice and, orgais wise to consider early is for again, the prospects of assaultyounger staff to learn the new tricks more readily than their almone employees are recognical elders. Left just to happen, the by propering the ground for the result can be confusion and ill feeling in offices whose staff in advance

Where forethought is at the greatest promium, however, a surely at the level of govern-ment. The development of the electronic office the carmion employing organisations where it makes us direct impact

reduced.

For staff who witt mainly be operating the system, there are vance will reduce the need for numerous introductory courses. available on the market. They usually last about three days, and secretarial jobs in confi and can vary in price from around £250 to £500. But after permit the control of new kinds the course, it is rare for anyone But inventive explanation of to become profesent in using new possibilities provide an desired the new system without practising on it for six months or so, especially if it includes combrought up in the different atti-tudes towards begrain; and plexities such as shared logic. thurshold Learning by doing in this way implies. thousands which the advance-

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ications revolution is reshaping the way we live. In the forefront of that change is Gwent, the new

Many potential buyers confused by manufacturers' jargon

ing the concept of the fully-integrated electronic office, it appears from a new survey that many smaller to medium-sized companies in the UK still bave serious doubts about the desirability and viability of

such systems.

Furthermore, a large number of companies perceive individual items, such as electronic word-processors typewriters. and mini-micro computers, as "an electronic office." says the National Business Equipment Survey, in a review of the attitudes among users and potential users.

The manufacturers' concept of the electronic office is not the same as the perception currently held by end-users, according to Mr Gautam Barua. of NBES. The market-place is all too often confused by manufactures' jargon and technology

Sixty-two per cent of small doubts as to the value of full utilisation of an electronic office Another major constraint for these companies is the capital jargon commonly associated cost related to new methods, as well as other hidden costs. In other words, the majority of the small

ALTHOUGH MANY manuestablishment sectors have liarity with such phrases, the large companies see redund-factorers are strongly promotes serious doubts related to the following response levels were ancy as a major problem. How-ing the concept of the fully-cost/benefit ratio.

The survey also highlights expenditure prioritles in terms of product groups. In the context of the electronic office, endusers are likely to concentrate major expenditure on the fol-lowing Items:

Computers Wordprocessors Electronic typewriters VDU/Printer terminal 10 Telecommunications, including telex Microfilm

With the exception of the larger office establishments, the concept of the fully-integrated office system has yet to be absorbed and comprehended by establishments employing less the marketplace and has there-than 50 people bave expressed fore failed to catch the imaginafore failed to catch the imagination of the vast majority so far. This has been confirmed by system where machines can the attitudes of end-users to-communicate with each other. wards the electronic office and their familiarity with marketing

system. When the National

investigated respondents' fami-

Equipment

Meanwhile. 34 per cent of respondents had no plans to in-troduce additional items of tech-

with the installation of an office

Data-base management Integrated network 45 Local area network System network architecture 18 Ethernet 22

(These figures add up to more than 100% because of multiple response.)

It is interesting to note, notwas only 22%.

jargon and with technology issues. A large number of endusers, both in large and small companies, need assistance from the manufacturers in terms of practical belp so that they can appreciate the application of office automation.

Large establishments, such as hanks, insurance comanies and

shared by medium/smaller sized companies employing under 100 people who think that new technology will increase productivity and profitability and thereby avoid redundancies, and in the longdundancies, and in the long-run will even help to invest more money in the business and provide more opportuni-tles for the workforce and in some cases higher employment. Another area highlighted in the survey is that of personnel

withstanding the vast amount of educational campaigning which has gone into promoting "local area xetwork" and "Ethernet," that the awareness of Ethernet

Manufacturers themselves are guilty of confusing the market-place/potential users with

local authorities, express the view that future problems will be related to the integration of hardware and software for multiple vendors and suppliers. The overall impression from the NBES survey is that some

relations between staff and

management: the general view in large establishments cm-

ploying around 500 people is that staff relations during the transition to the electronic

The problem of harmonising people to "make it work" is

an important factor and people

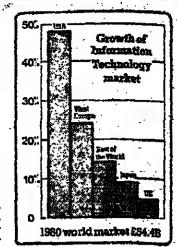
ahoold be made aware of the

potentialities of the technology so that they may appreciate that they themselves will be

capable of capitalising from

Michael Wiltshire

office are a key issuc.



DEPARTMENT Industry has estimated that more than 50 per cent of British companies are still not using microelectronics or information technology in any way—and most people outside the industry still have little idea what IT is

For Information Tech-nology Year, the nationwide awareness campaign. Mr Kenneth Baker, the Minister for Information Technology, bas committed up to £600,000 towards funding the year.

Meanwhite, the Governnient bas set aside £80m over the next four years to help British industry to research and develop innovative preducts and processes needed to increase the UK share of the market.

 Details of the campaign—
and the prospects for British equipment suppliers—bighlighted on Page XV.

How Mullard used technology at the heart of its own business to cut down waste:

Reducing the paperwork

moving along the route to office automation has itself taken substantial strides to reduce the amount of paper used to run its business.

"We could not afford to run our business the old way any more. We would not be able to afford to employ all the people who would be needed to handle the paper and we would not know what is going on in the company," notes Mr Ivor Cohen, Mullard's managing director.

The problem is simply that of taking orders, informing production and despatch and so on, through to invoicing. The comparison is not, as might be age where armies of clerks are wering customer telephone

of its own business. The com-pany has 19,000 different pro-ducts with 30,000 sub-products purchased by 3,000 customers.

When the system was first computerised and orders were processed in batches, it still involved considerable generation and movement of paper. Mullard bas now developed its on-line information processing to a level where paper barely appears. The major filing is only of the customers' original order once the information from it bas been directly typed into the

mainframe computer by a clerk. The only other pieces of paper to emerge from the system are an advice note for the customer and the invoice. All internal information—such as for production, delivery, accounts and so on—appears on video display terminals.

The most recent step has been to provide major customers with simple access to Mullard's own computiog centre in Hemel
Hempstead that the experience galned with Xibus was valuable in starting the company down this difficult road.

Elame Williams

Simple access to minard's own mainframe computer to quiz it about the level, nature and state of their own orders. More dramatically, by the end of the year they will be able to inquire about lead times, supply availability, prices, then to

MULLARD, the UK electronics order parts, from a terminal at subsidiary of Philips, and a supplier to many companies Mullard's computers via the telephone.

Customers equipped viewdata terminals will be able to dial Mullard's new private viewdata system which will in turn, link them to its IBM mainframe after about a 20-second wait. Each customer will have a nine-digit code number as well as their own changeable private security code. The advantage of the viewdata terminal is that it is a universal system and k enables someone unfamiliar with computers to easily find the data they want by offeriog a simple menu of choices. At present there are about 32 viewdata terminals on the system of which half are being computer used inside Mullard

processing orders manually, but with a computerised system used until a few years ago.

The range of Mullard's products and customers shows why it has to rely so much on the technology which is at the heart of its own business. The corn to its own business. to a Philips minicomputer, which is used mainly for woni-processing. Another minicom-puter with 12 terminals is used. for modelling and statistics. The minicomputers can also be

used for data entry and local processing and can be linked to the mainframe computer. About half of the staff at the Mullard House headquarters in London have terminals, and by the end of the year 60 per cent of the secretaries will be linked

to the wordprocessing system.
Managers now study manage ment reports on a terminal which used to run to 30 miles a month of paper notes before they were put on a real time gineers and salesmen are increasingly using portable terminals to operate the computer from bome or hotel.

The rapid growth of information systems and the ability to communicate with them by telephone has left Mr Cohen passing a questioning eye over the substantial rates on the large central London bead-quarters.

a Re An Information Technology Company

Jason Crisp



Secretaries can also use it to store files, send electronic mail, provide word

Local area networks deal with Xionics

BP plays the guinea pig

large systems need a measure

of control which can only be

managers at several levels

and by secretaries to store personal files, send electronic mail and messages, provide word processing, personal computing facilities and main-

bow to devise systems and

programmes on microproces-sors; to find out more about

open systems which allow different manufacturers' equipment to be connected

together and to explore how aspects of the automated office could be used within its

Mr E. C. Harris, BP Oil's director of finance and plan-

calendars.

obtained with a computer. The BP system is used hy

WHEN Mr Mike Bevan, chairman, of Xionics, wanted to develop an office automation system, based on the concept of local area networks, he managed to pursyade British Petroleum to act as a guinea pig and help guide the design. Since then, the Xibus system

has been chosen to automate the Cabinet Office in Whitehall during this year of Information Technology and has secured business from other large organisations such as ICI, Scottish Gas, Allied Breweries and Littlewoods.

The principle of office automation, using a local area network, is simple. All the electronic office equipment — from word processors to telex machines—are connected with a loop of cable which is wired around the building.

It's akin to the electricity main in every home into which we plug housebold appliances; instead of carrying power, the loop carries information from one piece of office equipment to another.

Xionics has developed an "open system" which means that a company can connect office equipment belonging to a number of different mann-facturers. This means that companies are not tied to one maker's equipment once the local area network is installed.

BP Oil agreed to acquire the Xibus system from Xiomics on preferential buying terms, and to make an advance stage payment in order to assist the funding of the development.

In addition, the company seconded two of its engineers to help with the design of the system which was installed by November, 1980. Since then, it has been used for the creation, storage, retrieval, ludexing, cross reference, printing and communication of words and data needed to operate a large

business. The BP oil installation at Hemel Hempstead is made up of 18 work-stations which can all communicate together but are monitored and controlled by the Xibus master node, which is simply a computer to keep track of work.

Some manufacturers of local area networks-which allow various types of office equip-ment to be connected together do not use a com-

ning admitted that at the time they decided to implement the electronic office there was "little choice at the time" and felt that co-operating at the development stage of the Xionics system was better than waiting for a suitable system to emerge. In general, British Petroleum is a company which is aware of

tain specialised logs and According to BP, the Xionics system offers significant improvements over less advanced techniques giving quick access to shared pools of information. the need to investigate new technology as it arises. It considers information technology to be so important that it has set up a special department to plan and implement the company's BP bad three aims in mind when it hecame involved with Xionics. It wanted to learn

Indicated the company's long-term IT strategy.

Mr Harris, however, did point out that office automation is a very complex subject and "the best way ahead for BP Oil will take time to emerge." He commented at the inauguration of the system at its computing centre in Hemel

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Alan Cane reports on the seemingly bewildering variety of systems now on the market Wide choice of electronic mail systems

SUDDENLY electronic mail is graphing the headlines. British it is expected the public will ments for the typewriter—make electronics systems which are their appearance as designed to transfer short Leyland Systems is extolling the accept the electronic office.

Virtues of its Comet service.

It is unlikely that any comvirtues of its Comet service. British Telecom, with unlikely pany would have the resources, sprightliness, launched its own financial, technical and human,

· Mart 11.3 Tablesheep 200

to be the size of the size of

1935 at thek

Gravell Was

proprietary systems. all, electronic mail in the form can all be connected easily of the public telex system has

THE General Electric Company, Britain's higgest electrical and electronics manufacturer, has until now conspicuously lacked

any coherent strategy for realis-ing the electronic office. This week, after almost a year's pre-

paration, it is declaring its hand.

pany, GEC Information Systems (GECIS), headed by Dr Nigel Horn, previously in charge of public switching. It draws to-

gether the group's activities in private branch exchanges

(PABXs), telephones and ter-minals, computers and Reliance.

its private telecommunications

subsidlary which will handle

Dr Horn describes GECIS' approach as "evolutionary, not revolutionary," It will not revolutionary." It will not promote any one technological

solution as heing intrinsically superior, but will aim to

assemble office systems around the particular needs of each

former office systems venture.

the starting point for most

automated office systems. Its own entrant is the SL-1, a

digital exchange based on tech-nology licensed from Canada's

Northern Telecom which is

designed to handle more than

200 lines. GEC has sold about

100 SL-1s in Britain and hopes

that existing customers will

Harn helieves that the range of the PARX will be more than

and that avoidance of expensive

rewiring will be economically

GECIS aims to launch later

attractive to many customers.

this year two low-cost terminals,

designed as desktop work-

stations to be used in conjunc-

Starting point

It has set up a new com-

The newly-formed GEC Information Systems aims

to meet needs of individual customers

GEC unveils strategy

their appearance, mature as designed to transfer short products and hecome accepted. messages and electronic systems, Other systems follow.

sprightliness, launched its own Telecom Gold operation only last month. And a score of manufacturers and suppliers including Argeon. Case, Datapoint, Hewlett-Packard, MDS Even if such a company existed, the necessary equipment is certainly neither available. and Wang have announced ment is certainly neither avail- based work stations and com Gold is capable of handling able on the market or conterminals has prepared the way. lengthy messages and has a host which all the excitement? After the form of the structed in such a form that it although electronic mail of useful facilities built on top

Although electronic mait of useful facilities built on top could be defined as any infor- of its basic store and forward heen working effectively for Progress is likely to be ally—the facsimile transmission many years. The answer has a gradual and slow. First, word of documents, for example mation transmitted electronic- formal.

Store and forward is the heart message services and means that just as you do not have to he physically at home for your postman to deliver a letter, so you do not have to be physically you do not have to be physically at your desk to receive an elec-tronic message. The message is held securely in computer storage until you are ready to

send short messages to each

ordinary mail.

Arriving at the onice in the morning you turn your terminal on and log-on to your local system—this is commonplace for many executives using com-puter-based accounting or predictive systems, in any case. The screen will then indicate the state of your mail box, and you can, if you wish, inspect your mail—either on the screen or using a hard copy printer.
It witt also organise your diary.
There are estimates that some executives clectronic mail systems in the U.S. But as the office system consultancy Urwick Nexos pul it in a review of these systems:
"Who wants to reptace a diary
by a £1,000 terminal and have to learn to lype in the process? What is wrong with a memo? About 90 per cent of letters are delivered next day and that is fast enough for most requirements. If you want to send an urgent telex you cao always go to the telex roum with a hand-

100 years ago, pointing out that the chief criticisms of that designed as a challeoge to British Telecom, for example, offers a facility on its Prestel service which enables users to

And that, Urwick says, is where electrooic mail can help: "The sender is oot annoyed when he does not establish direct contact as this is not required. The system will deliver the message to its destination as and when required by the recipient."

In favour

Other arguments in favour of electronic mail: Severat functions such as text editing, filing device, copier and so on can be com-

hined in a single desk-top

device. Any message system can be accessed anywhere in the world, given a telephone and

a portable terminal. These systems can be cheap to operate especially if terminals are already in use for

other applications. Against: Systems such as IBM's ADS and Wang's Digital Voice Exchange are a genuine

 A single screen cannol dis-play all the documents that may need to he examined during preparation of a mes-sage. The user could print out all the relevant majerial, but that would defeat the purpose of the system.

Existing computer systems may not be able to cope with electronic mail systems, Nelther may existing office

workers.

There is already a hewilderpeople scarce. Now hardware is Electric's

Urwick argues the same could ing variety of electronic meshave been said of the telephone sage systems on the market. Comet was written by the Computer Corporation of America interruptions are disruptive and it can be frustrating to fail in get through to the person of the control of America and is marketed in the UK by Eritish Leyland Systems. It was designed to run or District get through to the person you Equipment minicomputers, wish to speak with.

Now it is also available

وكدامن الأجل

Now it is also available on IBM mainframes. According to ELS, a small Comet contiguration based on a DEC PDP-11/34 minicomputer could support up to 600 subscribers. Comet running on a large IBM mainframe Messages for users are sorted by the computer and stored in named "mailboxes" in the computer's memory. When a user logs on, the system checks the correct mailhox and gives the user details of any new messages. The user can, of course, reply to any of the messages or write new fetters at the terminal,

What makes Comet in the UK and British Telecom's Gold Scrvice unusual is that they can be supplied on a hurean basis. Telecom has operated the National Data Processing Ser-vice since 1967. It operates the Prestel viewdata service which is really a country wide bure-in operation offering information instead of data processing. Now there is Telecom Gold, which is not owned by BT but by Dialcom, a small U.S. computer bureau which has specialised in the electronic office and in electronic mail in particular. and whose system has a high reputation for efficiency and reliability.

Apart from mail, Gold offers and diary scheduling, 'phone messages, data filiog, word and text processing.

Bureaux were born when clude Wang's Mailway, IP Sharp

What's the greatest leap forward in typewriters

since they went electric?



British Telecom lannehol its own Telecom Gold electronic mail operation his month. Above: a control room at the Telecom Fower

Furthermore, the technology is changing rapidly. So for many customers it could make sense to 20 to a bureau, learn the advantages and disadvantages of electronic office systems

keep a close eye on the future, Computer and Systems Unrincering of Enchmensworth offers, Infomail, a system written by the U.S. consultancy Bult Beranek and Newman, but significantly medified for the till market, informal grew out of Hermes, a message program written by BEN for the U.S. Advanced Research Projects Agency (ARPA).

Offerings

Hewlett-Packard has inst announced its own electronic mail system based on its Series 2000 minicomputers, while MDS Apart from mail, Gold offers (Mohawk Data Sciences) is dis-express delivery, post dated mall, multiple message facilities and diary scheduling. 'phone (World-wide Integrated Com-munications) developed by Willek of Connecticut.

Other important offerings in-Associates Mailbox, General Electric's Quickcom, IBM's

relatively cheap but people are DISOSS, and Telemail from GTE just as core and the software in run the systems has become incomparably more expensive. Were adding additional facilities ware adding additional facilities to existing services.

The technicalities are unimportant to the customer whu simply would value for money. According to the Urwick Nexos sindy, the cost justification of electronic massage systems is stell in donbt.

The report notes "At a o inposinia on Computer it issue Systems held in Ottawa demonstrate clearly the cost effective tasks of message systems was still open to doubt. That is not to an these systems are not cost effective, but rother that it is ford to show east effective-ness for a best of reasons, but least because valuing managerial and professional work is very difficult."

Most efforts to quantify the value of the electronic office fall down on this point. Even the use of word processors can be difficult to justify in these simple terms.

Until there are sufficient elecfrome mail users to bring about the necessary economics of scale, one of the chief virtues may be that comnosing memoranda electronically concen-

on marketing needs

"We ought to be able to stand back and give really pro-fessional advice," says Chris Ellis, technical and marketing director, who previously worked for IBM and for Nexos, the National Enterprise Board's

Dr Horn hopes that by pro-.at levels of about 100,000 units a year - he Not surprisingly, though, as will he able to price them at a telecommunications manufac-turer GEC sees the PABX as less than £500 each.

The second string to GECIS' bow is GEC's 4000 Series minicomputers, originally designed with an eye to defence applications. The design of the 4000 is particularly well-suited to use in communications networks - the machines already in service in British Telecom's Prestel viewdata

prove prime candidates for inflice Dr Horn plans to offer the 4000 as the hub of larger elec-GEC plans to offer a newly developed "black box" which tronic office installations in which users need to communiwill enable data terminals to be with remote computers. cannected to the SL-1 on existing office telephone circuits. Dr The machine is already programmed to carry out protocol conversion — that is, to "translate" hetween different com-puter languages — and to adequate for most office users assemble information into the form in which il can he transmitted on packet-switched networks, which are becoming increasingly popular as a means of sending data between computers.

As an optional extra, GECIS

GECIS' main reservations

equipment manufacturer which GEC acquired in 1978. Dick has supplied about 30 of the networks, known as Magnaloops, to American customers, primarily as the means of connecting communicating text and graphics processing

Product line

product line has consisted largely of copiers and diplica-tors hased on mechanical tech-nology. Since GEC took over, it has been attempting to rejuvenate its product strategy hy developing electronic office products, which it is now selling through its extensive marketing

development work, to ensure that programmes carried out on either side of the Atlantic are complementary. They also plan to collaborate directly at a new development centre established in Phoenix, Arizona, abont two

develop a powerful new minicomputer, due to be introduced later this year, and Dick is concentrating on developing techniques for document storage and handling which combine electronics and microfiches.

Dr Horn also hopes that II will

be possible to sell GECIS systems in the U.S. through A. B. Dick's marketing organis-

during the 40's. The basic design hadn't changed much since mass production began in the early 1900's.

AES Alphaplus.

printer and filing system.

writer that's so simple, even a two-linger

typist can use it. Yet it's so sophisticated, it shows what's being typed on a screen

to paper. If your secretary is happy with

the look of it, fine. If not, she just presses

a button and simply alters the bits she doesn't like, without needing to retype

the whole thing. She can also make as

many originals as she likes without

before a word has been committed

Although based on a 19th century mechanical

principle, the introduction of a spherical typing element (golfball) in the early 60's machines marked a major advance for electric typewriters.

leaving the room, the phone, and you, The typewriter with a screen, unattended. It's the typewriter that keepsarecord of everything that styped. improvingefficiency to a remarkable It's the typewriter that makes all degree. And it's so easy to use, anyone other typewriters obsolete. The type-

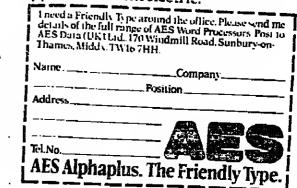
who can type at all can type on this. It can also be used for more sophisticated tasks as required. For example, AES Alphaplus is compatible with a wide range of other AES screen typing systems, which means it can communicate with them in offices around the world. It does a lot more than other machines, vet only costs a little more than the best electronic memory typewriters.



The AES Alphaplus. The high performance typewriter with a built in screen and printer. It can do more than one job at once, typing and editing a document, whilst at the same time printing another at over 300 words per minute.

> If you're thinking of updating your current appewriters consider investing inan AES Alphaplus.

It's the greatest leap forward since typewriters went electric.



How do I choose the right electronic office equipment for my business?

- Would my business be more profitable with an office computer?
- What is software, how do software packages work?

Office Systems the new monthly magazine will answer all these questions and more. It will explain all aspects of the electronic office to managers, business and professional people — and we'll send it to you FREE if you can show you *It will cover the entire electronic market from copiers to

- computers. • It will help you choose the right hardware and software
- for your particular needs. It will demonstrate through practical application

articles how to avoid expensive mistakes. It will untangle the legislative and technical issues thrown up by rapid changes in the telecommunication

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Solving today's problems with a GEC Viewdata executive terminal tion with the PABX. Both will he able to handle voice and data simultaneously. The first will equip the 4000 Series to handle electronic, mail and to store voice messages and to carry out tasks like preparing payrolls and accounting.

The Horn hopes that by pro-Dr Horn hopes that by pro-ducing in volume — he is ten-link hetween terminals connected to the PAEX and those attached to local area networks (LANS)-high speed office com-

munications circuits made from coaxial cable or optical fibre. Both Dr Horn and Mr Ellis are somewhat sceptical about the claims being made for LANS which, they argue, do not yet offer the cost-benefit advantages available from PABX-based

about LANs is that, at their present state of development, they do not in practice offer substantially greater transmission capacity than PABX-hased syslems and that as long as there is no agreement on common technical standards for the different types of networks, customers risk locking themselves into systems which might turn out to he obsolete

Nonetheless, GECIS will he prepared to supply a LAN developed by A. B. Dick, the U.S.

GECIS does not at present plan to manufacture text processing equipment itself, though Dr Horn says that it will probably offer to British customers the range of Magna machines developed by Dick in the U.S.

A. B. Dick's origins are firmly rooted in graphics equip-ment, though until recently its

According to Dr Horn, GECIS and Dick will co-ordinate their

years ago.

GEC Computers and Dick have already joined forces to

ation. But he says that no firm link-ups have yet heen agreed. and that in the immediate future GECIS is likely to concentrate primarily on establishing itself in the UK market.

There are now about 75,000 word processors and electronic typewriters in use in the UK. Above: International Computers' DRS Wordskil 8801 word processing system

John Lloyd examines the social implications of advanced technology in the office world

Impact of computerised communications

workers in offices "stagnated." passed them by: even the much increase paperwork of the con-ventional kind, and thus The most

mployment. The electronic office is a shortband phrase for the gradual replacement of paper-based communication puterised communication. Com-nology. The deal, after two nutries nower can replace, and years of negotiations, clears the now replacing, an increasing number of routine clerical tasks. The first commercial computers were centralised ing Centre: it will also present monsters which required a new the Government and the unions bureaucratic army to feed with a sharp test of their barthem: the modern derivatives are small, hringing information still-shaky relationship, and intelligence to the desks of The agreement gu

AS WORKERS in manufactory office workers and cutting down that in the two years it runs that the deal is only for two. These misgivings prose from with other unions. The are also turing industry become more the need for clerical staff.

Argument still rages on the compulsory redundances as a Government side, the thought Unions seidom wish to put a lorecognise the gradual erosion. long term employment effects Technical change had largely of computerisation. But the of new technology. It also lays feared computer revolution of computerisation, but on consulted on the plans the fifties appeared only to independent issues such as level in the new equipment.

The most notable breakthrough in office computerisa-This is no longer the case. tion in recent months—and one which iliustrates the case wellhas been the agreement between the Government and the Civil Service unions on new techway for far-reaching developments, especially in the Inland Revenue and the Vebicle Licensgaining structures and their The agreement guarantees

consequence of the introduction effects depend not solely on down that unions will be fully consulted on the plans to bring

Advantages

But it does specify that "a number of jobs will be lost as a result of the introduction of new technology"—though these will he dealt with by a mixture of natural wastage and redeployment. The unions were not able, as they wished, to win what they saw as consequential benefits of new technology—a sborter working week. They have also been unable to secure a commitment to full redeployment of staff to expanded services.

must be that if natural wastage must be that it natural wastage stop to technical pluggers between different types of does not shrink Civil Service though they often wish to delay between different types of numbers rapidly enough it by changing the terms under workers and educating their numbers rapidly enough, it, hy changing the terms under tougher demands can be made which it is introduced—yet they soon. For the nnions, those cannot look with equanimity on

that it could be improved next

Significantly, two unions did not agree to the deal—though their votes against in the Council of Civil Service Unions were not sufficient to sink it. never hidden its desire to cut
The Civil Service Union, which back on Civil Service staffing. represents the service grades. saw an eventual end to their ally in the task. large messenger section as Such misgiving paper no longer had to be same issues, contact and the large large

stop to technical progressit, hy changing the terms under officials reluctant to agree con- a shrinking membership, and soled themselves with the view possible eventual disappearance, that it could be improved next At the same time, they bave numbers be kept up by increas-ing services. Yet they are faced by a Government which has

ment of staff to expanded thought the conditions not services.

Thus, for both sides, the fact staff to rull redeploy- of Givil and Public Servants often in concert with manual tion, embryonic as yet, of new unions, are belatedly facing up strategies by the unions in the problems new technology order to survice and—they trust the prosper once more. carried: and the left-led Society in the white collar sector: many, of Givil and Public Servants often in concert with manual

and sees new technology as an

These misgivings arose from with other unions. The are also. the brute facts of the issue, restructuring their bargaining activists in the effects of com-puterisation, and the virtues of new technology agreements.

The matter is more urgent than most unions will admit. To legitimate fears on health and be faced with a large scale safety, and a concern that restructuring of work is a fornumbers be kept up by increas midable challenge for a rather. conservative union movement to face it in a recession with a radical Conservative Government in power is daunting indeed. Beneath the official union rhetoric and the decep Such misgivings, and the tive appearance of "husiness as same issues, confront all unions usual" the restructuring of usual" the restructuring of work is paralleled by the adop-

The shape of things to come continued from Page !

Plessey announced its version around the PABX (private be launched this year. of an office network based on a automatic hranch exchange); telephone exchange developed by Rolm of the U.S.

The list seems endless. It is no wonder that when asked the major problems encountered in office automation, some 48 per cent of companies questioned by Urwick Nexos replied that it was ensuring compatibility of

Most people agree that it will he years hefore standards for office automation are estab-lished. In the local area networking area, for example, there is a fierce disagreement between companies with a computing background and companies with office as it did in mainframe a telecommunications hack-computers. ground over the hest way to run such a network.

The computer companies-Xerox, for example, or Logica, selves or in a separate con- show its hand in office automa- partners, managers troller is the most cost-effective tion. Its Advanced Communicaway to run the network.

every office must have one and the copper wires to everybody's desks are already in place.

There is a totally separate to proceed slowly.

rgument about whether a netIts principal offerings are a argument about whether a network which can carry only text low cost stand-alone word pro-and graphics or one which can cessor, the Display writer, a cary video pictures as well is

Against this seething background, the position of the two giaots—IBM in computers and AT and T in telecommunications-remains enigmatic.

IBM has signally failed to take a lead in the electronic

AT and T. despite Its vast resources and research capahilities (including Bell Lahs, probably the most prestigious electronics research establishtions Service (ACS), a vision-The telecommunications com- ary concept intended to enable panies — Rolm/Plessey or incompatible computers to comNorthern Telecom, argue it is municate with one another has
The system will be hased As they grow they realise surprising that a lot of people
only logical to centre the office had numerous sethacks. It may around IBM's low cost small they cannot sustain their often are using it." Quite.

IBM's position seems to be that wiring np the office is more difficult than is commonly supposed and that it is hetter

small husiness computer and a text processing and distribution system called the 8100. It is committed to making it possible for all these devices to talk to each other. It bas a computer software package in-elegantly called DISOSS which streamlines document handling.

10-year strategy

What an IBM electronic office might be like is indicated by a system heing installed at Arthur Young McClelland, the argue that computing power electronics research establish- accountants. Its intends that by either in the terminals them- ment in the world) has yet to 1992 some 1,000 employees, and accountants administrative staff will have cessing, access electronically to all the

mail hased on DISOSS will be added and professionals will be able to do their own pro-

gramming on special terminals. Moores plan is a 10-year panies are finding it hard to strategy and therefore one of maintain profits. the firmest indicators of how IBM believes office antomation is likely to develop.

The nagging donht remains that IBM is just as uncertain as the rest of the industry. Late year, the Butler Cox Foundation, established by the consultancy of the same name, visited a number of U.S. office antomation suppliers to map their plans for the future.

Its most ahiding impression was of the problems growth hrings. Small firms often have a clear perception of their niche in the marketplace-Wang in word processing or together with Datapoint in distributed profor example—and therefore a strong sense of

mainframe and its 8100 Infor- spectacular growth from such mation Systems. Electronic a narrow base. So they widen their identity in trying to become all things to all men. ramming on special terminals. The pace of change is not The Arthur Young McClelland slackening and several com-

> Overall. the remains that the electronic office is a set of products looking for a market, It is manufacturer, not user, driven.

Nevertheless, there will he cost henefits to be gained from office automation when the right equipment at the right price is available. Manu-facturers will have to think harder about what people will be prepared to use. And as ergonomist Tom Stewart has pointed out, a terminal that prints "Hello" when switched on, is fooling nobody.

Muddled thinking and jargon will not heip. A company spokesman told the Butler Cox tour: "The Unix operating system is a kind of a de facto

VOICE SYNTHESIS SYSTEMS OF TOMORROW

Area of vast market potential

WHILE MOST office antomation systems are geared towards the written word, voice is still the most prevatent form of office communications. There is a huge market for the various equipments that handle voice communications, from the telephone handset of today to the voice recognition and voice synthesis systems of tomorrow.

According to a market report published recently by the Yankee group, a Boston market analysis firm, voice manpulation equipment — private hranch exchanges, telephones and related equipment-represented a \$3.8bn market in 1981 and will grow to between \$77bn and \$83hn

in 1985 Before voice signals can be manipulated by computer equipment they must be transformed for their natural analogue waveforms into digital signals. The technology required to do this is advancing years feet driven to advancing very fast, driven to a large extent by the potential market for office equipment incorporating the ability of a computer to "understand" the human voice and "talk" back to the user. Among the

first examples of such systems is IBM's "talking" mag card typewriter. The same type of technology is used by Texas Instruments in its "Speak and Spell" toys for young children.

Office applications

speech synthesis include a multitude of data entry verifications and corrections. Talking" electronic mail, for remote access to information on a computer system without a terminal, is another execulent application, particuiarly for travelling executives. In this case, alphanumeric messages are "transformed" into oral communications. Finally, in the near future, most office machines will

talk." to their nsers-to aid

in training, service or main-tenance, and easier input. For example, a copier might tell the operator to refill its toner. developer or paper. According to the yankee groop report, voice synthesis devices will become pervasive in both office and heme applications as the semiconductor chip makers improve the qual-

ity of synthesised speech and

bring down the prices of their

Voice recognition also has enormous potential in the office for simple data entry tasks, such as numbers or specific commands. Commercially viable voice recognition systems for continuous speech recognition are unlikely to be available until the late 1980s. but when they do arrive, such' systems would make the ultimate dictation machine which could automatically produce a.; written copy of the speaker's

A large market is expected. to emerge this year for digital ? "volce store-and-forward"... (VSAF) systems in which the speaker's voice is digitised so : that it can he stored on a computer disk, then reconstructed to be delivered to the recipient. Such systems will be particularly useful for remote message pick up and is an alternative to written electronic mall — overcomingthe objections of executives to

keyboards. Although digital VSAF represented only a \$6m mar-ket in the U.S. last year, sales: are predicted to grow to over \$350m hy 1985.

Louise Kehoe

Data, voice and text

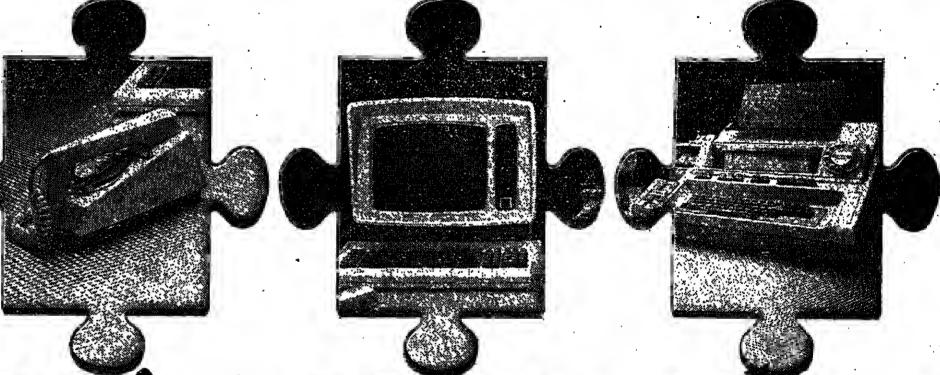
In the form of data terminals, telephones and telex, these separate systems are indisputably the three prime methods of business communication.

The trouble is, although each system becomes increasingly sophisticated as technology improves, there has always been one major drawback. An incapacity for each of the systems to communicate with the others.

In effect, there have been barriers preventing intercommunication caused by the varying communication patterns and characteristics of each of the systems.

Meaning that they've all spoken a different language. Until now.

For ITT Business Systems has introduced a common denominator in the form of new technology which uses the Information Transfer Module. ITM for short.



Inly we can interconnect them so they can intercommunicate.

In converting the different signalling languages of each of your communication systems, the ITM links them all up together by effectively removing the barriers which have so far kept them apart.

But to explain precisely how it all works would take a technological age.

Suffice it to say that thanks to our innovative approach and our experience in data, voice and text systems, the phone can now talk to the telex, the telex can speak to the data terminal and the data terminal can converse with the phone.

The applications are unlimited.

And surprisingly enough, this apparent miracle can be accomplished using your existing equipment.

to add this new technology to your current systems.

Your present telephone, telex and data network systems are simply waiting for Information Transfer Technology. And in order for them to talk to each other, all you have

to do is talk to us. Write for details to TTT Business Systems, Lion Buildings,

Crowhurst Road, Hollingbury, Brighton, Sussex BN1 8AN. We have the technology to transfer all the information quickly to you.

ITT Business Systems is the business communications arm of Standard Telephones and Cables plc.

No need for any replacements. We will advise you how



FT-ACTUARIES INDEX

Still no equal after 20 years

By R. Pain and J. Plymen

FT-ACTUARIES ALL-SHARE INDEX

LAST SATURDAY was the standard for portfolio perform-20th anniversary of the first ance studies over both the short calculation of the FT-Actuaries and the long term. series of share indices. After two decades, this comprehensive statistical service is still unequalled by any other national index in the world.

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UK investors can now refer to a vast amount of statistical material covering a particularly interesting and testing period. This past index data is readily accessible by subscribing to the 20 year record published by

the FT.
The FT-Actuaries service is much mnre than a single index. It embraces the All-Share Index, with its 750 constituents, broken down into as many as 40 groups, complete with divi-dend and earnings figures which are lacking in many of the well-konwn national indices to be found overseas. There are also related fixed-interest in-

It was in 1931 that the two actuarial societies, the Faculty of Actuaries in Edinburgh and the Institute of Actuaries in London, first produced what was called the Actuaries Investment Index. Covering some 200 ahares and debentures, it was calculated nn a monthly basis.

By the early 1960s, bowever, it was obvious that this original series was obsolete and in dire need of modermisation. The objective was wider coverage and daily publication; and by and daily publication, and by that time computer facilities were available, thus permitting the use of arithmetic averaging and comprehensive weighting techniques hitherto impractie-

The logical development was the actuarial organisations and the leading financial newspaper, the Financial Times, to enter into a joint index project, The design and construction were the responsibility of the actuaries, with the newspaper staff collecting the statistics, and using the computer facilities of NCR.

The All-Share Actuarles Index with its weighting based on current marker valuation is designed to reproduce the performance of an equity portfolio invested proportionately in all the more important companies on the London Stock Exchange (over 90 per cent of the market capitalisation of the London Stock Exchange is in fact covered). It is thus the ideal

In fact, one of the most common uses of the Ali-Share Index is as a measurement yardstick for the assessment of portfolio performance. For this purpose it is much more suitable than the FT 30-Share Index.

market indicator with its hourly publication and its reliance on the 30 moat active stocks. It is therefore ideal for judging the "tone" of the market. Over a period of years, however, it lags behind the modern series, mainly because of its geometric

How a comparison

can be made

the FT 30-share index stood very close to 300. Consequently by changing the FT Actuaries to a starting figure of 300 rather than 100. The top chart showing the performance of the all-share index since 1962 is scaled to a base of 306.6 on the right hand side of 306.6 on the right-band side and to a base of 100 on the left-hand side. On the alternative baais the FT Actuaries can be said to have reached 600 in 1972 and over 1,000 at the all-time bigh of 1981.

In contrast the FT 30-share cent (the yield recorded by the inflation by some 21 per cent ndex now stands at only 560, FTA 20-year gilt index in April p.a.

1962). Hence equity investment Even the dividends with their index now stands at only 560, a direct reflection of the downward bias inevitably imparted by the geometric averaging.

overall performance, capital and income combined, is best indicated by a "redemp-tion yield" based on purchasing equities at a cost of 89.23 in June 1962, reinvesting all the dividends and selling the shares for 313.12 in December 1981. This can be regarded as reproducing the actual experience of an investor aged 45 taking out a single premium self-employed pension policy, investing 100 per cent in equities and cashing in the contract at age 65 ln exchange for an annuity. On this basis the monetary return comes out at some 12.4 per cent per annum.

edged stock is only 6.24 per have

The FT 30-share index provides a valuable short term averaging.

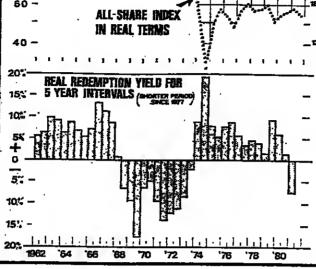
For example, in April 1962

a ready comparison can be made between the subsequent performance of the two Indices

350-

300 -

Over the same period the return from an equivalent gilt250 -150 -



has doubled the gilt-edged yield over the 191 years. Over this period the price indices increased 3,15 llmes, representperiod the of 6.65 per cent p.a. The corresponding move in the dividend

the indices bave to be related'

can one expect any bank to go on doing this? Most impartial

cessful that's fine, but when he

fails he blames the system.

clearly there in the form of

state control with Mr Benn ready and willing to provide it.

Is that what failed capitalists

nise that what has happened to

ones to take over. And sad

of my former friends and col-

leagues who may now face re-

dundancy through no fault of

Platt will in the long run prove

On the contrary, let us recog-

really want?

Well, the only, alternative is

Even the dividends with their better performance still lag behind the inflation by some 1.4 per cent p.a. However, if allowance is made for all the ing a compound rate of growth dividends as well as the capital changes the overall return from sponding move in the dividend the equity portfolio comes out index has been from 4.08 to at some 3 per cent in real 18.44 by 4.52 times, with a money (12.4 per cent monetary compound gain of 8.04 per cent. return reduced by 9.4 per cent To get the "real" figures, for the Inflation).

The real return of 3 per cent to cost of living figures. In over the whole term has not practice these are taken at half-been earned evenly. Two-thirds yearly intervals, so that the study will be made most occurs over the first 10 years. Conveniently from June 1962 to December 1981 covering 191 by calculating real returns years. Over this period the cost over successive 5 yearly periods of living index has moved from as in the chart above. The 53.6 to 308.8, equivalent to a figures are calculated every six compound rate of growth of months so as to include the 9.4 per cent p.a. Equity prices effect of the December 1974 have thus underperformed low.

1974 and 1980 provided quite retailing in 1967. Notable good a high real return if sold after performers among the more exactly five years or in important groups are oils (683). December 1981. Purchases food retailing (591), insurance during the years 1968 to 1973. bowever, made at historically high prices and sub-normal yields (sometimes below 3 per cent) had to contend with 5 yearly inflation rates of up to 16 per cent p.a.

Over this particular period therefore, with the performance severely affected by rapid inflation, equity purchases were best avoided. It must be admitted that 15 years ago "inflation beating " investments were bard to find. Traditional gilt edged stocks were obviously a poor alternative as yields were rising and prices falling. The least unsatisfactory investment over this period was presumably short-term deposits paying a rate of interest rather below the inflation rate.

When index linked would be best

If a similar situation were to arise in the future of course, investors would be able to switch from equities into the index linked government stocks with an assured real return currently of between 21-3 per

The pattern of real dividends shows the impact of the high inflation rates of 1973 to 1976. Both before and after this period dividends bave kept pace with the rate of inflation.

A glance at the daily group price indices shows a divergence between the long term performance of the different categories. On April 7, 1932, the highest index number in electricals at 1,264 compared with motors, the lowest, al 93 (compared with an all-share index of 320). Naturally quilc a number of groups have disappeared over the period as industries have declined or been nationalised (steel, machine tools, building, rubber manufacturing etc.).

Some of the initial categories bave been split into sub-sections while other groups have been put together. For example, heavy electricals and light electricals have been combined.

Equines bought during the New groups were set up for years 1962-1967 and between insurance brokers and food brokers (431) and property (442). Particularly poor results are recorded by composite insurance (156) and textiles

> It is easy to job backwards and to show the benefit that rould have been obtained by keeping in the right market and the right group ever the 20-year period. Making the correct palicy decision at the right time is of course fraught with danger. Nevertheless, a comprehensive system with prices, dividends, carnings, etc. combined with a complete long-term record of these figures as provided by the FT/Actuaries service is an essential tool to be used with other available market and economic indicaturs so that the skilled investor can oblain an above average real long-term performance.

A major extension of the service came in 1976 with the starting of improved fixed interest stocks indices. These provide a price index covering all all-dued securilies and a matrix indicating the pattern of yields over different caupens and maturity dates. Also included is the cumulative divi dend factor for each year which as time passes will allow the five-year interval yields in be calculated as has been shown above for the equity market, These indices were further extended to cover debeolures and preferences to 1981.

joint committee is investigating the calculation of a cumulative ex-dividend factor for the equity market (similar to that for gilts]. This will give a more accurate figure for equity dividend payments through the year, and will enable a roll-up lodex to be calculated which is wanted by among others, managed pension funds, to assess investment performance where the divi-dends are automatically re-

Mr R. Pein and Mr J. Plymen ore Fellows of the Institute of Actuaries. They were both inroleed in the esteblishment of the FT-Actuaries index in 1962.

Lombard

Last laugh for 'funny money'

By Samuel Brittan

widely welcomed—a year ago this was not because anyone supposed that inflation was about to become zero or could be ignored.

basis for expenditure of anning assumption is optimistic the was based on "funny money" or eash total will be low; if it is "volume terms." The practical effect was to compensate spending authorities not merely for the general inflation rate but for particular increases in costs, however large.

Thus an increase in the number of teachers counted as higher public spending but a big increase in pay did not. It made no difference if public authorities switched from com-ponents or materials which were rising in relative price to those which were falling or vice versa. same such economics did not count as genuine savings. The cash limits system was

among other things, a stop gap attemot to olug resulting inefficiencies and tighten control. But as the limits were superimposed un an expenditure planning system designed in volume terms there was a large element of locking the stable door after the horse had holled.

The Armstrong Committee recommended a switch to "cost terms," This is best regarded as the nearest equivalent to eash control in an inflationary world. If you like it is indexating without "funny money." To take a hypothetical, but alas rather topical example, of a battleship costing £100m today. Let us assume that inflation is 10 per cent, but that the battleship will cost £115m in a years time.
Under the bad old "funny money" no increase in expendilure was registered. Under pure cash measurement, the spending increase is of course 15 per cent. In "cost terms" which allows only for inflation but not for the increase in the relative price of battleships, the spending increase is approxl-

Although I was a member of the Armstrong Committee, f tn candemn cash planning welcomed the switch to cash as altogether. Bul unfortunately the White Paper may play into the advantage of being in the same kind of actual money as longing to bring back "funny tax revenues. But the condition

mately a per cent.

When the decision to switch of that welcome was that the public expenditure control to a Government was crystal clear cash basis was made—and about its inflation assumptions. The point which is difficult for sceptical politicians to grasp is

that it does not matter exactly what inflation assumption is gnored. made for later years so lnng as It was because the previous it is stated. If the inflation what the slatislicians called pessimistic the cash figure will be high. In either case the reader can see the rough planned path for public roending after allowing for inflation.

Imagine then my horror when the Public Expenditure White Paper appeared as a string of meaningless numbers with no elear-cut inflation assumptions and without any statement of envisaged percentage increases even in money terms for any enlegory other than the whole planning total.

Mr Terry Ward, in a specialist paper for the Commons Treasury Committee could find on inflation assumption for 19823. His therefore took the official retail price index forecast retail price index forceast between the fourth quarter of 1981 and of 1982, of 9 per cent On this facts there is almost no real increase in spending between 1981-82 and 1982-83. For later years sense toll from

assumptions are given, but the position is even more confusing. The White Paper states that the average cost of expenditure in 1983-1 and in 1984-5 will rise by it per cent and 5 per cent respectively. This has to be due out of a chapter on the social security. The Financial Statement t" Red Book") on the other hand which was printed later, gives GDP dellators for the same two years of 7 oer cent and 6) per cent.

It Is not a nucstion of which document is right for so far ahead. Both will chylously be wrong. But when it is hoped lo stabilise or reduce slightly the real value of public spending it is extremely important to state the inflation assumptions if cash figures are to make any sense,

It would be a plty if these and other erudities were to lempt the Treasury Committee the hands of those who are

Letters to the Editor

The bumpy road to Stone-Platt's receivership

From Mr J. Langham

Six—An impartial observer would be forgiven for drawing the conclusion from the plethora of general Press comment, that the only thing that want wrong with Stone-Platt appointment f believe came far Industries was that it had too late to have any chance of management and despite respectively. io fairness to everyone concerned that somebody should I am certainly prepared to take nbservers would, I think, say try to put the record straight. my share of the blame as a that the Midland bed already My qualifications for attempt member of the Board at the gone well beyond normal com-

My qualifications for attemption to do this are threefold—time.

I was a lifetong employee of By contrast, it must be said that the Stone businesses—years the executive director in charge of one of the operating bumps, propellers, and foundaries—bave each been relative to suggest that it can only mean in its simplest terms when Stone-Platt bad neither the resources nor the confi-dence to continue with it. And led customers of the Midland have not been disastrous. Their Bank for many years.

Platt never had an ounce of industrial logic. It simply conglomerate uf totally different engineering businesses operating in diverse industries. As a result there was never any scripe for remaining businesses will go, — terminating organisations rationalisation or economies in too. My guess is that they will and managements which are no manufacture. research, or have a much better chance of longer successful for whatever marketing. All it really did was prospering under new owners reason, and regenerating new which should bave been uoder Stone-Platt. And in this as f am 10 see the end of my scrapped long ago, and as a connection, contrary to what old company, for whom f result to starve other businesses. has been stated in some Press worked loyally and bappily for

was surely the management ployees of Stone-Platt whom f and direction of the Platt textile machinery business over pension rights they had earned their own, I believe the appointment from the lotally safeguarded as well as ment of a Receiver for Stonebeen the business itself because the problems of worldbecause the problems of world-ployment, and not one of my lo bave been to the best in-wide recession, high exchange managers has left. If believe terests of the majority of the rates, and soaring interest charges were not significantly businesses. different or worse than those Then there seems to be 21-24, Bury Stree facing many other engineering almost a conspiracy to make the St. Jomes's, SW1.

Industries: was that it had too late to have any chance of management and despite re-bard-nosed bankers who at the reversing the decline), there peated failures to meet fore-first sign of real trouble with has been a lack of effective casts for two long years. It drew their support. Nothing in direction from the Board which played a leading role in two my opinion could be further has clearly failed to take the rescue operations. How long from the truth and f do believe difficult decisions that were so can one expect any bank to go obviously needed, and for that

the same difficulties. Profits that when a capitalist is suchave, of course, slumped, and losses bave been made in some of the plants, but overall they ank for many years. managements may well not The marger of Stone and have been brilliant, but there would bave been no real problem for these businesses to survive either together or

separately. Pumps and propellers have Stone-Platt is in fact a good already been sold and now the example of capitalism at work remaining businesses will go — terminating organisations to enable companies to continue than ever they would have done which should bave been deve- reports, may I take the apporreports, may I take the upports of many years, and deeply tunity of making it clear that sympathetic as I am for those But what went really wrong every single one of the 900 emtonk over have had whatever lotally safeguarded as well as ment of a Receiver for Stonetheir other conditions of emthe came is true of the other employees concerned. . John M. Lengham,

Then there seems to be 21-24, Bury Street,

The Japanese way with interest rates

From Mr A. Horspail Sir. — May I develop your Important point (Leader, April 1) about interest rates in Japan where savers not borrowers enjoy the tax breaks. Here in the UK it works the other way round; industrial borrowers making profits enjoy an interest rate subsidy through offsetting corporation tax whereas private and overseas savers are penalised through withholding tax on dividends. If these concessions were removed some believe the general levels of UK interest rates would be significantly

lower. The new issues of indexed UK Treasury Bonds are unsatisfac-tory substitutes as they are inevitably restricted to Government borrowing and thus offer no help at all for industrialists' needs. Furthermore, indexed Government bonds provide an open-ended opportunity for any less resoonsible future UK governments to abandon fiscal discipline and to concede any tevela of inflation. A better alternative might be to stick to fixed coupon borrowing but abandon tax on dividends on corporate as well as Treasury

Interest rates, as well as acting as a tool of mooetary discipline cannot be dissociated from exchange rate policy. Time-lags necur in virtually all settlements for overseas trade which, as the mirror image of inter-bank settlements, determine foreign exchange rates. As interest rates fall those currencles in trade surplus tend to rise, whereas rurrencies in trade deficit weaken. This point integrates with smaller or larger public sector borrowing, respectively. Therefore only countries in trade surplus can afford to increase domestic borrowing.

This important point was upset by the massive expansion or the Organisation of Petroleum Exporting Countries' trade surpluses throughout the 1970s where small domestic demand was incapeble of shouldering the task of sufficient economic expansion to keep the rest of the industrial world employed.

Efforts by the U.S. to take

on this responsibility coincided with separate domestic policies to de-regulate oil and other energy prices causing inflation. The fact that U.S. federal funds to protect that economy, worthy

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the time honoured traditions of the East, And, above all, the attention that ensures that the journey, far from seeming too long, seems, if anything, too short.

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Nigerian unports

30 that foreign curreocy would oot be available for uninspected goods arriving after April 16, UK exporters should be aware

banks, may or may not be cern themselves with shipment

feels that pratically the inter-position of SGS will not add

of credit of which they are bene. Similarly unless letters of risk to exporters, ficiaries, and advised and concredit expressly refer to M H. T. Legg, firmed to them by correspondent forms then advising/confirming crossoceans.

accepted by the exporter at his dates embodied in approved M iscretion. forms. If the documents pre-Normally amendments to sented to advising/confirming on Nigerian imports needs clari- date or remove impossible credit amendments that request ficultion. UK exporters should be aware time and expense to the transpaying banks did not welcome not the Japanese way with any amendments to letters action.

Similarly unless letters of risk to exporters.

The exporters should be aware time and expense to the transpaying banks did not welcome not the Japanese way with interest rates, which has helped to protect that economy, worthy

banks of Nigerian commercial banks are not obliged to con- 6 Princes Gate, SW7.

From the Secretary, Crossoceans letters of credit received by banks are exactly in order then Sir.—The article by your exporters are welcomed since they must be paid. Obviously if World Trade Editor (April 1) they usually extend shipment UK exporters reject letter of remove impossible credit amendments that request clauses but any amendment inspection and ship under let for first class borrowers persist.

Whatever the truth behind imposing inspection where pre- ters of credit where M form at 14 per cent, whereas consumer the Lagos Times report of March viously goods were exempt may shipment dates are past, the prices have fallen to 7.5 per 30 that foreign curre ocy would be rejected unless the exporter paying bank has a risk in cent or even lower, bas the paying bank has a risk in cent or even lower, bas the getting exchange cover from appearance of an awful big stick Nigeria—it would be natural if in wave at world markets. Is it

> of examination? A. G. Horsnail.

For the convenience of readers the dates when some of the more important company dividend statements may be expected in the next few weeks are given in the following table. The dates shown are those of last year's amountements except where the forthcoming board meetings (indicated thuse) have been officially published. It should be emphasized that the dividends to be declared will not necessarily be at the amounts or rates per cent shown in the column headed "Announcement last year."

Akroyd end Smithers...May 11. Int. 3.5

Assoc. Paper Inds...May 12 Int. 0.6

BAT Inde. Apr 28 Int. 6.5

Joseph ... May 14 Figs 13.5

Scotland...Apr 13 Final 9.5

*Sleckwood Hodge...Apr 14 Final 1.5Slec Circle Inds...Apr 29 Final 10.0
Boots May 21 Final 4.625
*Snipsh Home

Storas ...May 10 Final 2.75 Brittan Sogar .. May 12 Int. 7.5 Briston

*Brixton Estatus May 5 Final 1.69
Brockhouse May 22 Int. nii Brown Boveri - Kent...Apr 10 Final 1.2

Ferries...May 13 Final 3.45

Fight Refuelling Agr 23 Final 1.5 French Kier May 5 Final 2.3 Gorrerd and Nat. O'sc. Apr 27 Final 9. Grand Metropolitan May 15 Int. 3.175 Hambro Lile Apr 14 Final 5.9 Hall

(Matthew)...May 6 Final 9.552

Freser Apr 29 Final 4.5

Queensway...Apr 21 Final 4.0 Queensway...Apr 21 Final 4.0
*Hawkar
*9 iddeloy...Apr 21 Final 5.2
*Heath (C.E.)..May 19 Final 7.4
*Hapworth (J.) May 5 int.0.79
*House of

Jahnson end Firth Brown... May 22 Inc. 1.3

*Kerrk Save
Discount_May 6 Int. 1.8
Discount_May 6 Int. 1.8
Laing (John) May 15 Final 1.875
Land Secs: May 15 Final 7.0
Laporty Inde...Apr 23 Finel 3.5
Lioyde and
Suattsh...May 21 Int. due

London and Morthem...May 20 Fiscal 2.35
*London Brick...Apr 15 Fiscal 2.632
*Low and Bonar Mar 29 Final 9.5
*Marks and Spencer...Apr 28 Final 2.3
*Marks and 19 Final 2.3

Morgan Crectible...Apr 15 Final 3.0

Royst Bank
Scotland...May 7 Int. 2.4
Sainsbury (J.) May 6 Final 5 0
Semuel Props...May 1 Int. 1.2

Semion Frigor May 27 Final 1 5
Smiths lads. Apr 27 Final 1 6
Smiths lads. Apr 28 Int. 3.7
Tarmec Apr 27 Final 1 5
Taylor Woodney Apr 15 Final 10 157

Trefsiger House...May 13 let. 3.0

7 ravie and Amald...Apr 23 Final 3.3 uns.Moy 7 Final 3.61

Breveries. May 8 Int. 2.5 WhitbreadMay 19 Final 4.9 "Wimpey (G.)...Apr 29 Final 1.7 "Board meeting insumeted. † R

Board meeting insumeted. † Ridfils up since made. † Tax lite. § Scrip us eince mede. † Forecast.

(John) ... Apr 20 Final 5.0

PENDING DIVIDENDS

Surge in publishing profit lifts Pergamon to £5.9m

A DRAMATIC Improvement in charging £600,000 expenses on profits from the publishing electronic publishing, computer-activities of Pergamon Press ised information storage and profits from the publishing activities of Pergamon Press from £3.74m to £6.99m offset increased losses in other parts of the group, and the pre-lax figure finished 1981 £1.37m ahead at £5.87m. Group turnover fell from £11.082m to £71.04m.

Losses from the publishing electronic publishing, computer minority debits of £29,000 (£9,000 from the press in the publishing computer minority debits of £29,000 (£9,000 from the profits available for distribution amounted to £4.22m (£2.09m). The extra-ling division which consists of ordinary debits represent the £5.87m. Group turnover fell wheatons of £xeter.

Losses from the publishing computer minority debits of £29,000 (£9,000 from the profits available for distribution amounted to £4.82m (£2.09m). The extra-ling division which consists of ordinary debits of £29,000 (£9,000 from the profits available for distribution amounted to £4.87m ahead at the losses of the printing division which consists of ordinary debits of £29,000 (£9,000 from the profits available for distribution amounted to £4.82m (£2.09m). The extra-ling division which consists of ordinary debits of £29,000 (£9,000 from the profits available for distribution amounted to £4.82m (£2.09m). The extra-ling division which consists of ordinary debits of £29,000 (£9,000 from the profits available for distribution amounted to £4.82m (£2.09m). The extra-ling division which consists of ordinary debits of £29,000 (£9,000 from the profits available for distribution amounted to £4.82m (£2.09m). The extra-ling division which consists of ordinary debits of £4.83m (£2.09m).

£621,000 and securities dealings of BPCC, £1.6m on trade investments and £2m on capital equipmade losses of £661,000 compared with profits of £1.03m. The group's results do not include ils share of the £1.22m (£11.26m)
ore-lax losses of 77 per cent
owned BPCC (reported on April

Mr Robert Maxwell, chairman of this private company, says the directors are satisfied the current year will show a considerable improvement over 1981.

The advance in publishing profits was in the face of the cootinuing world recession, he says, and were profils was in the face of the continuing world recession, he says, and were struck after which included £3.25m group

from £110.82m to £71.04m.

Losses from the printing division advanced from £262,000 to E262,000 to F621 for factors of Exeter.

Wheatons of Exeter.

During 1981 the group spent £10m oo purchasing the majority

ment. It has no baok or other

horrowings and at the year end had £8.4m on deposit and £4.5m in gilt edged and quoted securities.

relief payable to BPCC. After minority debits of £29,000 (£9,000 ordinary debits represent the group's 40 per cent share of closure losses amounting to £1.2m of two subsidiaries of an associate Thompson Printers, the remaining shares in which are owned by BPCC.

Pergamoo Oxford bas a profit charing scheme whereby staff are paid a profit sharing bonus oo July I and at the end of December cach year. The directors propose to distribute under the project on July 1 and at Christ-mas 1982 the sum of £325,000 11281—£214,000). This is roughly the equivalent of 7.5 to 10 per qualifies under the scheme. The number of people who will benefit is 400, the same as in 1981.

THE WIDESPREAD changes that have taken place in nearly all activities of Fisons, gives it a much reduced and more competitive cost basis that enables the group to face the future with growing confidence, says Sir George Burton, the chairman, in

his annual review. In 1982, Fisoos should see the further benefits of the restructuring undertaken last year, the extraordinary costs of which have been borne in the 1980 and 1981 accounts, he states. Extra-ordinary charges for these two years totalled £30.56m.

The improvement came from the effects of cost savings and more aggressive marketing slarting to llow through into profits — as

Referring to the sale of its Hydro, Sir George says the disposal is regarded as a major step in the strategic development of

culture, pharmaceulical and

While not looking for any significant improvement in the economic environment, tha group aims to continue to exploit its potential in 1982. The directors heen grasped and gains are being made in the market. The group is in a leaner and fitter state with strategically strong husinesses operating on an international scale.

to stringent cash management, which together with resources released by restructuring, bas confined the net cash outflow to £0.9m, against £2.6m in 1980. Working capital ratios Improved in all divisions as a result of programme and the group's cash needs remain well within its

Group headquarters has conlributed to the group's improved performance in 1981 by moving from the centre of Landon to a less costly single office in lpswich and reducing the numbers to make a tighter move effective centre. Costs in 1981 were well down on budget and

The recommended RTZ offers for Tunnel Holdings have now hereme unconditional in all interim dividend of 0.5p net inii) respects. The offers remain open has been recommended. Last for acceptance until further year a single payout of 1p was

Crowther Group early in February, an era in textiles came to an end. Mr Hyman was to the sixties what Sir Freddie Laker was to the seventies, a buccaneering entrepreneur for whom events turned sour.

Two months ago, Mr Hyman sold a 33.5 per cent stake io the

Huddersfield company held by his family trusts. The sale took him out of a field where, for a while in the sixties, be had heen a giant figure, merging companies, featuring in the papers, talking of a life in

Between 1961 and 1970, he built Viyella Inlo a massive texthe concern, absorbing others such as Van Heusen and Cyril Lord Carpets along the way, before be was denoted in a boardroom coup just before Christmas 1969 Christmas 1969. He ran Vivella with what

last connection with the John

might be described as strong personal control: executives came and went with almost as great a rapidity as his turnover in mer-chant banking advisers.

Sixteen months after leaving Viyella, Joe Hyman was back in textiles with a bid for Crowtber.
Only this time be was in Yorkshire rather than his native Lancashire. Once again be pro-claimed be was about to create another empire, this time in woollens and worsteds as he had. once before, in cotton and manmade fibres.
For 10 years he pursued the

aim wilb apparently decreasing entbusiasm, and a year ago be sold 20 per cent of bis stake to Trevor Barker, a Darlington accountant who had been invoived in a northern travel husines, and Is now chairman of Findlay Harware Group, of Glasgow, and placed another 35 per cent with the institutions.

Mr Barker had been approached by Hyman in 1930 to see if he could belp pull the company round.

company round. "He was baving problems of living in London and acknow-ledged that the business could not go on like this.
"I had a good took at the husiness and saw I could do

WHEN Joe Hyman severed his something with it, but that I could rise to £200,000. could not work with Joe Hyman for no other reason than we were two very strong characters and he would not see things my way, and I would not see them his way and that there would be inevitable clashes.

AS JOE HYMAN BOWS OUT ...

Trevor Barker is new

force at John Crowther

BY ANTHONY MORETON, TEXTILE CORRESPONDENT

"He respected this view. What I saw was a business that had had a lot of money spent on it over the last 10 years in modern equipment and machinery, but that it had suffered at the hands of a bad exchange rate. It had o tremendous volume problem that they could only fill by meeting the Italians head-on with

cheap elotis.
"He had solved a lot of that "He had solved a lot of that by cutting the labour force in the years 1978-80 from 850 to about 200. But the company was then in the position of having used up a lot of its reserves and didn't know where it was going. It needed a driving force to push it along."

Hyman bad found that, beset hy the worst recession the industry bad known, he bad been unable to do for Crowther what be had done for Viyella, despite walving all dividends and n taking a salary. Crowther had lost money in seven years of bis 10-year reign. But he did hequeath Barker a modern,

efficient concern.
When Hyman arrived, the company was operating with 1,000 old-fashioned looms; these have been reduced to 28 of the latest Sulzers from Switzerland. The smaller workforce is also latest Sulzers from Switzerland.

The smaller workforce is also much more efficient. In July, of his family trusts, Mr Barker 1978, the 740 employees were producing an average of 17 per cent of the places of 18 per cent of the per cent of the places of 18 per cent of the per producing an average of 1.7 pleces of cloth a week (a piece is around 70 yards). Three years later, the average from 205

workers was 2.85.
Trevor Barker attributes the improvement partly to a change of management, partly to new equipment and partly to energy

savings.

"When we had 1,000 iooms our energy system was anliquated, By re-string the small number of modern looms in a more compact area, we are saving £100,000 tn £150.000 a rear in energy costs alone. This figure

"What we have done is to put the looms into about a quarter to a third of the aite and then put up the rest of the space on the market. We have let about 15 per cent so far.
"On the production side, the

plant is now well balanced, but we shall be putting in more looms. Over the next two years we shall get another 12, which we should be able to pick up secondhand. There are plenty of those around now.

On the cloth side, the company has gone out of the cheap end of the market leaving that to the Italians. In future, it will be in higher-quality material, trading at the "top end of the middle range."
"We are also going strongly

"We are also going strongly into men's cloths, which is new for us, and we bope to reestablish some of the better export markets, such as Canada, West Germany and other northern European countries."

Mr Barker comments that having got the textilea side right and the property moving, the and the property moving, the company will now look to acqui-sitions to help it de-gear.

"At the moment, gearing la about 70 per cept, with £1.1m of borrowings on capital of £1.5m. This has slightly deteriorated in the present financial year."

Acquisitions will not neces-sarily be in textiles. "We might look at light engineering, for

now has 24.1 per cent of the capital with the institutions holding 60 per cent and the small shareholders the rest.

After a pre-tax loss of £911,377
In 1980, Mr Barker believes the

corner bas been turned, with the loss down to £227.000 in the first balf of 1981. During the latter half of the year, the comably for a time, which gives bope

"We are now very much a recovery stock," be says, and even on a cold, wet night in Huddersfield it is possible to

RECENT ISSUES

, p.	b Lice and	Amount paid up	Renulno. Dato	19t		. 9tock	Otoeing	+ or <u>F</u>	amount ilmos Covered Oross Yield P.E. Ratio
11 12 12 13 13 13	48 15 02 		15/4 5/5 7/5 16/4	212 28 136 25 25 250 250 93 275 134 170 30	196 19 122 21 27 250 89 267 126 137	AIM Group 10p Amarsham Cambrian & Gen.7sp Dew Idaorga Fleat Holdinge 20p Greenfriar Warrants Flo Technology Firmm. Bis. Sys. 10p Flathsene Drilling Leisura Inds Coconics 10p Osproy Assets P. H. Industrials Standard Sees	198 28 126 22 39 259 267 196 155 394 136	53 g6 b1 	7.6 2.3 9.4 5.7 0.2 2.5 16.0 7 4.0 5.5 5.6

FIXED INTEREST STOCKS

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"RIGHTS" OFFERS

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10	Nil	-	_	212pm	2pm	Ansbecher (H.) 5p.,+	9pm	1g
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A51	NI	_	_	412pm	3 lepm	Bono Corp	44pm	
70.	F.P.	15/3	19/4	108	73	+Clyda Petroleum	102	4
40	F.P.	B/3	23/4	42		Enargy Finance 10p	38	
30		22/3	10/5	60	50	First Castle 10p		
160	F.P.	22/3	29/4		164	Hunting Pet. Services	184	
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98	Nil	19/4	4/6	3pm	3pmi	Riley Laisura	3pm	
74	F.P.	8/4	6/6	106	98	St. George's Grp. 10p	105	+1
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renunciation date equity last day for dealing free of stemp duty. b based on prospectus estimate. d Dividend rate paid or payable on p capital; cover based on dividend on full capital. g Assumed dividend end r Indicated dividend: cover relates to previous dividend, p/E ratio based on unitial earnings. ur Forecast dividend: cover based on previous year's ear P Dividend and yield based on prospectus or other micrial estimates for Q Gross. T Figures assumed. \$ Figures or report awaited. ‡ Cover allow conversion of sheres not now ranking for dividend or ranking only for rest dividends. § Flacing price. p Pence unless otherwise indicated. It issue tendar. § Offered to holders of ordinary shares or e "rights." ** issued by w capitalization. § § Reintroduced. T issued in connection with reorganisa marger or take-over [§ Introduction. § Issued to former preference bole Albumont inters (or inthy-paid). • Provisional or parity-paid shotmant let \$ With warrants. If Ilaslinge under epacial Rule. \$ United Secus Market. ‡ Looden Lateng. \$ Effective issue price siter scrip. § Foredeast is under Rule 163(2)(e). § \$ Unit comprising five entitiery and \$ Cap sheres.

Public Works Load Board rates

Effective April 10 Quota losas repeid Over 5, up to 6... Over 6, up to 7 ... Over 7, up to 8 ... Over 8, up to 9 ... Over 9, up to 10 ... Over 1g, up to 15 Over 15, up to 25 Over 25

Non-quota loans B are 1 per cent higher in each case than non-quota loans A. † Equal instalments of principal. ‡ Repayment by balf-yearly acousty (fixed equal balf-yearly payments to include principal and interest). § With half-yearly payments of interest only.

M. J. H. Nightingale & Co. Limited 27/28 Lovat Lane London EC3R 8EB

£0000's			OL	_		P/I	.
			Change	GTUSS	Tield		Fully
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4,228	Airaprung	73		4.7	B.4	11.6	16.0
1,100	Armitage & Rhodes	- 44	-1	4.3	9.8	3.7	8.3
12,159	Sandon Hill	199	-2	9.7	4.a	9.7	11.8
1,325	CCL 11:0% Conv. Prol.	106	-1	15.7	14.8	-	
4,720	Oeborah Sarvices	91	-1	6.0		. 3.0	5.7
3.984	Frank Horsell	125		8.4	5,1	11.3	23.1
11,124	Fraderick Perker	77	. +1	94	8.3	3.9	
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3,899	Ind. Prec. Castings	96	-1				
2,592	Into Come Best			7.3	79	9.9	10.4
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	Jackson Group	97	_	7.0	7.2	3.1	6.9
15,872	James Burizugh	115	_	8.7	7.5	8.4	10.6
2,468	Robert Jankins	242	-2	31.3	12.9	3.4	3.6
3,180	Scruttone "A"	63	1	5.3	8.4	9.7	9.0
- 3,881	Torday & Corlisia	159	—	10.7	6.7		9.5
2,885 -	Twinlock fird,	13	, -1 ₂	_			-
2,184	Twinlock 15% ULS	80	_	15.0	1a.8"		
3.815	Undack Holdings	25	<u> </u>	3.0	12.0		7.6
10,013.	Walter Alaxander	79	-1		8.1	6.2	9.2
5,368	W. S. Yeales	230		14.5		6.0	
	Prices now available	on Pr	estel pa	72 4874			-

Growing confidence at Fisons

reported March 2.

THE ROYAL BANK

OF CANADA

U.S. \$100,000,000

Floating Rate Debentures due 1987

In accordance with the provisions of the Debentures,

notice is hereby given that the rate of interest for the

period from 7th April, 1982 to 7th October, 1982 has

been fixed at 15.4375 per cent, per annum.

On 7th October, 1982 Interest of U.S. \$392.37 per

U.S. \$5,000 nominal amount of the Debentures and

Interest of U.S. \$3923.70 per U.S. \$50,000 nominal

amount of the Debentures will be due against interest

Coupon No.1.

Swiss Bank Corporation

Reference Agent

International Limited

significantly reduce the level of gearing and will subsequently provide the group with the finan-

Pre-lax profits for 198t in- cial scope to develop its horti-creased from £3.8m to £9.3m, on culture, pharmaceulical and turnover of £494.4m (£453.7m). · scientific equipment businesses.

Referring to the sale of its potential in loss. The uncertainty fertiliser division to Norsk say it is now evident that many Hydro Sir George case the disc. of the immediate problems have

High priority has been given committed facilities.

savings of £1.5m are expected in 1982 compared to the old

Meeting, Centre Point, W.C, May 18, at 11 am.

RTZ/TUNNEL

Taxable profils of Trident The directors say that during ment is expected to make the first six months they have significant contributions to profit been preparing for the launch in 1983, they say, Revenue from Computer Services for the first six months to January 31 1982 of new products and the expansion of the comnany's fell from £162,000 to £143,000 nn marginally bigher turnover of £1.31m, compared with £1.27m. engineering service base. Expen-

Trident Computer profit slips to £143,000

Earnings per 10p share are given as 2.5p (30) and an interim dividend of 0.5p net (111)

dilure i incurred hy these es, and investigating further investment opportunities, has been fully written off in the

lines is firm despite continuing the recession. Pre-tax profits

interest receivable of £44,000 £39,000) and tax lock £74,000 (£36,000). Last year there was also an extraordinary surplus of The benefit of expenditure on new products and new invest-

CITIBAN(

CITIBAN(

U.S.5200,000,000 Guaranteed Floating Rate Notes Repayable at the Option of the Holder at Par Commencing October 1982

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(Incorporated with limited liability in the Netherlands Antilles) Unconditionally Guaranteed by

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In accordance with the terms and conditions of the above-mentioned Notes and Agant Bank Agreemant dated as of April 3, 1980 batween Citicorp Overseas Finance Corporation N.V., and Citibank, N.A., notice is hereby givan that the Rece of Interest has been fixed at 15½% per ennum and that the Interest payable on the relevant Interest Peyment Date, July 13, 1982 against Coupon No. 9 in respect of U.5.\$10,000 nominal of the Notes will be

By: Citibank, N.A., London, Agent Bank April 13, 1982

The Industrial Bank of Japan Finance Company N.V.

U.S.\$50,000,000 Guerantaed Floating Rate Notes Due 1988



In eccordance with the torms and conditions of the Notes and the provisione of the Reference Agency Agreement between The Industrial Bank of Jepan Finance Company N.V., The Industrial Bank of Jepan Limited and Citibank, N.A., deted October 6, 1980, nooice is hareby given that the Rate of Interest has been fixed at 15½% p.e. end thet the interest peyable on the relevant interest Payment Dete, October 13, 1982, egainst Coupon No. 4 will be U.S.\$800.63.

April 13, 1982 8y: Citibank, N.A., London, Raferenca Agent

IHI

The Industrial Bank of Japan, Limited London Floating Rate Certificates of Deposit

> \$10,000,000 due October 15th 1984

For the six months April 13th 1982 to October 13th 1982 the C.D.'s will bear an interest rate of 1534% per ennum.

Samuel Montagu & Co. Limited

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Deposits to and further information from The Treasurer, Finance for Industry plc, 91 Waterloo Rd., London SEI 8XP (01-928 9822, Ext. 367). Cheques payable to "Bank of England, ac FFF" FFI is the holding company for ICFC and FCL.

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CREDITS

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OCKS.

Argentina fails to meet deadline

THE FIRST impact of Argen-tion's decision to block payments in Chile, Peru and Ecuaments to British banks emerged dor. The latter's finance minist the end of last week when its central bank told Chase Man- to drum up support for a large battan's London subsidiary that credit to belp the country's it would not meet a payment private sector through the deadline on a \$50m revolving effects of devaluation. credit arranged last autumn for

involved in the deal said they reach, received a telex from Chase informing them of the problem. The syndicate involves a range of North American, European and Arab banks.

Argentina appears technically to have broken the terms of the loan by refusing to meet the payment deadline. But bankers said that the syndicate was unlikely to take any action as the payment concerned involved a repayment of principal which would bave immediately been redrawn under the loan's revolving nature.

As similar situations pro-rate for eurodollars, and under-liferate, however, concern con-writers will receive a per tinues about the legal standing cent underwriting fee. of Argentine loans to the Euromarket. Few bankers predict any formal declarations of default, but most agreed at having already raised almost the end of last week that the IfIbn out of a total require-market has become so nervous ment of If1.35bn. As a result, as to stifle any further efforts

by Argentina to raise inter-A meeting is due later this week on the future of the as ... Korea's Exchange Bank is ex-yet unsigned recent \$200m pected to award a mandate this credit for Segba, the Buenos

holidays. First would it be is expected to offer lenders an easy for Argentina to retrieve option to provide funds at a lis international credit rating margin over prime rate, since the Falklands crisis is In Eastern Europe, discusquestion was that Argentina's any operations do emerge, Euromarkets on favourable U.S. UK. terms could be impeared for a Japanese banks for a fresh long time to come: On the credit, although international

Originally Ecuador was sugthe oil drilling company Cia de gesting \$900m for this credit.

Perforaciones Rio Colorado. It now seem to have scaled the Chase Manhattan, which is amount down to \$500m, agent for the credit, declined although many bankers say to comment, but other bankers even this figure will be hard to

> With the exception of Ireland, European borrowers who have recently been fairly active were holding back from new business last week ahead of

facility involves the sale of three- or six-month notes on a continuous revolving basis to investors such as corporations

and central banks. The notes will bear interest at the London interbank bid

Ireland has made considerable progress with this year's foreign borrowing programme. it will probably be able to avoid launching a major syndicated credit this year which had been

expected in some quarters.

Korea's Exchange Bank is exweek for a credit of some \$500m Aires, electric utility, while on the basis of a split 1-1 per plans for a \$250m borrowing by cent margin over London inter-Gas el Estado, the gas utility, bank offered rate (Libor). The tave been put in abeyance. spreads would be a record low Two further questions were for a Korean borrower, but this being asked in the market as would be mitigated by the fact bankers left for their Easter that, for the first time, Korea

over? Second would the credit sions between Yngoslavia and rating of other Latin American German and French banks on borrowers decline in sympathy? separate bilateral credits are. The consensus on the first reported to be continuing. If ability to raise money in the Yugoslavia is expected to ask Canadian and second question, bankers said bankers say that the climate for that Argentina's problems Yugoslavia has not improved would not belp an already much since plans for a \$400m rather gloomy general outlook credit were dropped during the

for Latin America.

Elsewhere in the region banks are already watching with Peter Montagnon

INTERNATIONAL BONDS

IBM syndrome strikes again

THE IBM syndrome struck the Eurodoliar market again last week, and a number of U.S. corporations found themselves able to borrow money from Swiss investors with bonds yielding less than U.S. Treasury paper.

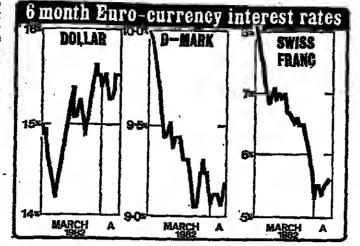
The syndrome in question is the phenomenon whereby famous U.S. companies team up with aggressiva European new issue managers and play upon the sometimes insatiable appetite of Swiss investors for easily recognisable U.S. corporate names.

While the secondary market was sluggish last week the new issues sector was buzzing. A total of \$535m of new fixedinterest Eurodollar bonds were launched in the four days before the Easter weekend

Among the U.S. borrowers ashing in on funds which were clearly cheaper than in the States were Campbell Soup and Getty Oil. American Express, although not such a premier name, also joined in the fun and borrowed cheaply in Ешгоре.

How does the IBM syndrome work in action? A Campbell Soup issue is brought to market with an aggressive 14 per cent coupon. The Issue is only \$50m so it is not going to be a large amount to move anyway. And before you can say ministrone or chicken stockpot, the Camp-bell Soup is being ladled up in Zurich's Bahnhofstrasse,

The name-conscious Swiss investors are out in force. Yet investors are out in force. Yet reality of the concern. the more sophisticated institutional investors elsewhere are degree of sense in the argument the more sophisticated institunot going to prefer such a paper, not going to prefer such a paper, against the publication of kets the World Bank is launch-even from top quality U.S. cor-weekly U.S. money supply ing its 15th hond issue, a porations, if they can get a figures: the statistics are diffi-V30bn 12-year samurai bond at



But the Swiss are buying. On Thursday, the U.S. 141 per cent 1989 Treasury bonds were yielding 14.79 per cent on an annual basis. The Campbell Soup issue or the Getty Oil 14 per cent issue, at a price of 99, yielded 14.10 per cent soup as a price of 99, yielded 14.10 yielded 14.10 per cent.

In the secondary market the Eurodollar sector closed last week on a decidedly sluggish note. The bond markets on both sides of the Atlantic are once again talking about the expected bulge in U.S. M-1 money supply figures. There is little logic in this fear of a money supply bulge—it happens every April
—but that does not alter the

higher yield from U.S. Treasury cult to rely upoo, they have a sometimes disproportionate lm-pact on floancial markets, and they only increase the U.S. bond market's volatility.

Volatility is the word for the sterling bond sector these days. As the Falkland Islands crisis becomes more serious, the previously buoyant bulldog bond market has lost its confidence.

Bulldog bonds - domestic sterling issues by foreign bor-rowers—follow the fortunes of UK giks. The gilt market lost three points last week and the buildog sector lost between two and three points. Whereas the underlying tooe bad been healthy before the crisis and interest rates were beaded downward, uncertainty now per-

vades this market. recc In the Japanese capital mar. par.

8 per cent. The samurai bond market—the domestic yen bond sector for foreign borrowers saw prices rise by about I point last week, roughly the same amount as in the Euro-yen bond market. The reason for the slight increase is the view some investors are taking of an appreciation in the Japanese currency from its present low

The Japanese government bond market had a less happy week as the Bank of Japan tried to nudge interest rates higher to protect the yen. The benchmark 1988 6.1 per cent paper closed the week unchanged and the 1989 7.7 per ceot paper weakened by a point.

In the Continental Eurobond markets, the Euro D-mark sector closed the week ? point higher, while the Swiss franc foreign hand market was 1 point stronger by Thursday.

The Inter-American Development bank brought out a DM 150m 10-year issne at 9 per cent, priced at 991 to yield 9.08 per cent. The paper was changing hands on Thursday at about its issue price, a good

The West German Capital Market Sub-committee meets this week to set the next calen-dar for the foreign bond sector. 9.08 per cent, The paper was about DM 1bn a month of new issues.

In Switzerland the falling inflation rate is encouraging the bond market, and a number of recent issues are trading above

U.S. BONDS

Thin outlook as prices drift down

But in other respects, the credit in investments (where it does markets are expected to be not). much the same — thin and hesi-

Bond prices drifted a little ower last week, and sbort-term interest rates were mixed. Most striking was the decline of the Fed Funds rates from the unnaturally high levels it reached during the end-of-quarter rading at the turn of the nonth.

Sectiment was still domi-lated by worries about the money supply, which analysis had warned would rise sharply as people liquidated investments in advance of the April 15 tax payment deadline. The comparatively low increase announced by the Federal Reserve Board last Friday (MI was up \$900m) showed that analysts had got the direction right, if not the size of the change. The biggest surge is expected in the next forinight, however, when the Fed announces the figures for

the weeks ending April 7 and 14. Unless the hulge is truly massive, however, the Fed has the option to sit tight as it did during the bulge in the first quarter of this year. Despite last Friday's rise, M1 is still only slightly above target, and

January has been downward. The Fed also revealed in the recently released Minutes of its February policy meeting that it might broaden or raise M-1's turget range to allow for the Alan Friedman fact that people prefer to keep their money in savings accounts

WITH LUCK, trading on Wall and money market funds these Street will not be blotted out days (where it gets included in by another blizzard this week. the money supply) rather than

This "liquidity preference" has already been blamed by top Fed officials for much of the volatility in the money supply in recent months. The Fed is also considering this week whether to change the current weekly money supply announce ment and do away with what has come to be known as the Friday afternoon "crap shoot." Wall Street's other big worry,

the Federal budget deficit, brought some good and bad Reports from Washington suggested that Congress and the White House may have moved closer to a compromise on the

On the other hand, the White House raised its forecast for this year's deficit by \$25n to \$100.55n and oext year's by

នាហាព The trouble is that even the increased figures fall tens of billions of dollars short of deficit estimates that are doing the rounds on Wall Street and are being discounted in the

credit markets.

U.a. INTEREST	RATES	(%)
	Week	to Week to
	April	a April ?
Fed funds wkly, av.	14 29	15 83
3-month Treas, bills	13.15	13 70
3-month CO	14 70	14 75
30-year Treas, bonds	13 65	13 58
AAA Unit	1e 73	16 00
AA Industrial	15 50	15 37
Source: Salomen am	thers (: Potem.ies
In the week to March		

David Lascelles

CURRENT INTERNATIONAL BOND ISSUES

Borrowers	Amount m.	Maturity	Av. life years	Coupon %	Price	Lead manager O	ffer yield
U.S. DOLLARS	:						
5. Carolina Elec. and Gast	60	1989	7	15}	991	Kiddey Peabody old.	15.620
Campbell Soupt	200	1992	10	õ°	27	CSFB, Morgan Grnty,	14,000
Campbell Soupt	50	1989	7	14	100	CSFB, Morgan Gmty,	14,000
Aetna Life‡	150	1997	15	15	100	Morgan Stanley	15,000
Ennia‡	60	1987	5	15}	100	Amro Intl.' Morgan Stanley	
Hertz‡	50	1989	7	153	100	Salomon Bros., Lehma Bros. Kuhn Loeb	15.500 n 15.750
CIT	50	1987	5	151	•	Diffon Read, Salomon Bros.	
SNCF(¶‡	125	1988	6	5 <u>1</u> ¢	100	Morgan Guaranty, Societe Generale	5,2509
Getty Oil‡	100	1989	7	14	100	CSFB	14,000

Amount m.	Maturity	Av. life years	Conbou	Price	Lead manager	Offer yiel
			2	. = ::::. =		
75	1989	7	14}	100	Morgan Stanley, She	
65	1987		14	100	Blyth Eastman Paine Webber	14.250 14.625
20	1987	5	163	100	Banque Intl. 3 Lux.	16.750
150	1992	10	9	99. <u>I</u>	Deutsche Bank	9.080
80 100 50	1992 1992 1987	=	71 64 1 71	100 100	CS SBC CS	7.750 7.250
30bn	1994	12	8	993	Daiwa Secs.	8.040
	75 65 20 150 80 100 50	m. Maturity 75 1989 65 1987 20 1987 150 1992 80 1992 100 1992 50 1987	m. Maturity years 75 1989 7 65 1987 5 20 1987 5 150 1992 10 80 1992 — 100 1992 — 50 1987 —	m. Maturity years % 75 1989 7 141 65 1987 5 141 20 1987 5 162 150 1992 10 9 80 1992 - 71 100 1992 - 61 50 1987 - 72	m. Maturity years % Price 75 1989 7 14\(\frac{1}{2}\) 100 65 1987 5 14\(\frac{1}{2}\) 100 20 1987 5 16\(\frac{1}{2}\) 100 150 1992 10 9 99\(\frac{1}{2}\) 80 1992 — 7\(\frac{1}{2}\) 100 100 1992 — 6\(\frac{1}{2}\) 30 1987 — 7\(\frac{1}{2}\) 100	m. Maturity years % Price 75 1989 7 141 100 Morgan Stanley, She Amex Intl. 65 1987 5 141 100 Banque Intl. 3 Lux. 150 1992 10 9 991 Deutsche Bank 80 1992 — 71 100 CS 100 1992 — 61 * SBC 50 1987 — 171 100 CS

This announcement appears as a matter of record only هذا الاعلان يظهر للتلوين فقط

FUERZAS ELECTRICAS DE CATALUNA, S.A. (FECSA) (فكسه) شركة فورزاس الكتريكاس الكاتلونية ، ش.م. (CATALONIA — SPAIN)

> كاتلونية ــ اسانيا US\$ 40.000.000 ۰ ۰ ۰ ۰ ر ۰ ۰ ر ۰ ځ دولار امريکي

MEDIUM TERM LOAN قرض متوسط الأجل

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THE NATIONAL BANK OF KUWAIT S.A.K.

ARAB BANKING CORPORATION (ABC)

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بنك الاندوشين والسويس

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INDUSTRIAL BANK OF KUWAIT K.S.C.

UBAN-ARAB JAPANESE FINANCE LIMITED

المدراء المساعدون

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البنك الوطني الكويتي ش.م.ك. المؤسسة العربية المصرفية بتك الاندوشين والسويس البنك العربي ــ الاوروبي (الشرق الأوسط) E.C. المصرف العربي الليبي للتجارة الخارجية شركة أبو ظبى للاستثمار البنك العربي ألفرنسي للأستثمارات الدولية الشركة الكويتية للتجارة والمقاولات (ش.م.ك)

يوباف ــ المصرف العربي ــ الاميركي النك الأهلي الكويتي شركة الائتمان العربية بنك الكويت الصناعي يوبان _ الشركة المالية العربية اليابانية المحدودة

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SWISS BANK CORPORATION INTERNATIONAL S.G. WARBURG & Co. LTD.

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April 6, 1982

or the Securities Act of 1933 and may not be offered or sold in, or

BY CHARLES SMITH, FAR EAST EDITOR, IN TOKYO

Bandar Khomeini petrockemical project in Iran, announced Iranian debacle. yesterday that five executives of director level and above, as and his colleagues will be well as the company's standing formally decided at shareauditor, will retire in June.

The list includes the chairman, Mr Yosbizo Ikeda, but not Mitsui's president Mr Joshikuni Yahiro. Mr Yahiro will stay on as chief executive to handla the problems of extricating the from Bandar

Mitsui said last night that the Iranian problem might have some connection" with the retirements, hnt "normal per-sonnel changes" were also

Some weeks before yester the current vice-president Miday's formal announcement, Masaru Uchida.

MITSUI AND COMPANY, the Japanese newspapers were Japanese trading company in speculating that Mr Ikeda would volved in the loss-making retire from the chairmanship to take responsibility for the

The resignations of Mr Ikeda

holders' meeting in June. The same meeting will approve a decision by the company to set aside Y40bn (\$160.9m) as special reserve to cover losses on the Bandar Khomeini project and to reduce the dividend. As a result of the reserve fund allocation, Mitsui is almost certain to show a loss on its 1981 business results, the com-

pany said vesterday. Mr Yoshizo Ikeda became chairman' of Mitsui in 1979. after acting as president. His successor as chairman will be

Hongkong & Shanghai banks in joint venture

Corporation, are to establish a London investment management operation to service the rapidly growing foreign investment needs of U.S. pension funds.

The operation is understood to be the first joint venture between Wardley, a Hong Kong merchant bank, and Marine Midland, a large U.S. commerclal bank, in which Hongkong and Shanghai holds a majority

Traditionally, the various parts of the Hongkong and Shanghai Banking empire have worked independently of each of the first signs that the group by the middle of the year.

WARDLEY and Marine Midland is trying to harness its Banks, both part of the Hong-kong and Shanghai Banking Antony Gibbs, the group's London merchant bank, will have a small stake in the new operation, which is expected to be called Wardley Marine International Investment Management. Wardley manages over \$2bn of funds in the Far East. Mr Steven Swift, an executive with Wardley Investment Services, has been posted to London to run the operation.

Wardley Marine Interna-tional will register with the U.S. Securities and Exchange Commission for permission to manage U.S. pension fund investments. Once this is granted, it other; the new venture is one will hegin operations probably

Modest increase by BHF Bank

BERLINER HANDELS und interest rose 14.5 per cent to Frankfurter Bank (BHF Bank) announced a rise in 1981 net earnings to DM 26,3m (\$10,86m) from DM 25.3m in (\$10,86m) from DM 25.3m in As for 1982, this is seen as a 1980, our Financial Staff writes, year of increasing credit risks. Herr Christian Schroeder the bank to expand its risk Hohenwarth, co-chairman, said reserves for foreign loans that better operating earnings substantially. with lower refinancing costs were given priority over net exposure in Poland totals chairman of the board and Mr assets, which rose only 1.1 per DM 25m. Overall risk reserves John F. Ruffle, vice-chairman cent to DM 9 09bn after a 9 per are currently at the highest Both will serve a one-year term

DM 158m last year from DM 133.9m, The dividend is being held at DM9 per share.

BHF's non-guaranteed credit level since 1970 and are six commencing July 1.

Frank S. Owen to new positions plans. Upon my retirement on Texas.

working on special corporate times as high as the 1980 figure.

Mr Eric D. Saunders has been as associate directors of June 1, Mr Property will become FRIENDLY FROST INC. projects. level since 1970 and are six commencing July 1.

FRENCH BONDS

Foreign investors steer clear of Paris issues

FOR THOSE with a fondness Of the FFr 103hn (\$16.4bn) of upsurge this year because of happily absorbing since have pressure from the authorities to increasingly lear on bening for such details, today is some new issues last year, foreigners the substantial financing needs accounted for about two thirds give first preference to subscribing the substantial financing needs accounted for about two thirds give first preference to subscribing the substantial financing needs accounted for about two thirds in the (mainly Arab institutions) are of the Government and the pub- of this and have had a limited ing to a government backed loan institutions. development of French capital markets. Holders of shares in the newly nationalised banks industrial groups are required to exchange them for state issued compensation sellers of the FFr 7bm to over 35 per cent to FFr 95bn bonds, and the new bonds FFr 8bn shares of the newly and the realised deficit is exbecome tradeable on the second-

The swap thus brings down the curtain nn the final act of France's nationalisation drama. The equity market, deprived of some of its most prestigious names, is left in the shadows, and the bond market becomes the major source of long-term capital.

By international standards France's bond market still remains small and has not attracted much foreign interest.

reckoned to have taken up only lie sector. 10-15 per cent. Fears of a franc devaluation have been pushing foreigners out of the market of new issues in 1982. The Foreigners have also been heavy nationalised commanies and banks that changed hands last month before they ceased to be quoted on the bourse - selling

pressure on the franc. The bond market, in contrast, has been growing rapidly. New issues rose by 70 per cent in 1980 tn FFr 107bn as a result of the policy of M Raymond Barre, the former Prime Ministar, to drive savings into looger term instruments. They stabi-lised last year, but the market

has been expecting a renewed

planned budget deficit is up and the realised deficit is expected to be closer to FFr 120bn. Moreover, the newly nationalised banks and industrial groups can no longer look to the equity markets to 16.90 per cent on public sector raise fresh capital because this notes have generally had a poor would dilute their state sharewhich contributed to the rising

> be large But the rhythm of new issues has so far been no faster than last year with a total so far of about FFr 30bn. Floating rate same time, major investors, like notes which the market first insurance companies and pentook up in 1979 and has been

Borrowing has been largely Brokers talk eagerly of the possibility of FFr 130bn-300bn sustained by the newly established "Fonds Communes," a type of unit trust set up by banks and money market dealers to provide an alternative for investors to term deposit accounts.

currently carrying a coupon of bolding. Their additional invest- faith that interest rates will ment requirements are likely to come down as the Government

Traditionally, this time of the year is a period of slack trading for the bond market. At the sinns funds, have been under

ing to a government backed loan to plug the deficit in the unemployment benefit fund.

In this relatively unfavourable climate, the government has held hack from launching the new state loan that had been expected. The Ministry of Finance, it had been thought, had been hoping to market this with a 15 per cent coupon as compared with the 16.20 per cent on the FFr 8bn state loan raised in January. But with the hank of France's day-to-day money market rate still being held at 17 per cent in defence of the franc this remains un-

realistic, at the moment. The key question hanging over the market this year is whether the Government, faced with the enormous public sector financing requirement, will

insurance companies, and other institutional investors over which nationalisation has given it an increasingly strong info-ence to take up issues at leaser rates than would normally be accentable.

The risk of this is that the French marker would became increasingly dirigists and care of from international trends.

Meanwhile for French in vestors, the compensation bonds of which the capital is repayable over 15 years and which on issue carry a coupon of 16.64 per cent, are attractive The current everage yield of state bonds is 16.10 per cent For foreigners, the first meoccupation will continue to be the size and timing of the part French devaluation.

David Housego

New chief for Midland Bank Canada

 Mr Jack H. B. Nederpelt has been elected president, chief executive officer and member of the hoard of directors of MID-LAND BANK CANADA, Toronto, the wholly-owned subsidiary of Midland Bank. He succeeds Mr Dennis G. Sherwood, who is Mr Richard D. Alman has been

elected a vice-president of the WESTERN UNION TELEGRAPH COMPANY, principal subsidiary of Western Union Corporation. He will he primarily responsible for the company's priority mail services, which include commercial applications of Mailgram message service. Western Union Computer Letter Service, and the operations of Western Union Electronic Mail, Incorporated.

• Mr Howard E. Tyrrell has been named director-corporate risk management for KANEB, Houston. He was vice-president of risk management with Charter

Oil Company, Jacksonville. • At the AMERICAN IRON AND STEEL INSTITUTE Ms Janet Nash has been appointed as director, statistics, 980, our Financial Staff writes. Year of increasing credit risks. FINANCIAL EXECUTIVES Presenting the bank's results, a forecast that has prompted institute. New York, an Ierr Christian Schroeder the bank to expand its risk organisation of more than 12,000 senior financial officers representing over 6,000 companies, has elected Mr Charles R. Allen.

alected vice-president operations for SEARS MERCHANDISE GROUP, Chicago. He succeeds Mr Charles F. Moran, who has heen elected vice-president-corporate planning for the company. AM INTERNATIONAL, INC., Chicago, has appointed Mr James A. Putlak, Jr, as division vicepresident and controller of the company's multigraphics division.

THE STANDARD OIL COMPANY (OHIO) has nominated.
Mr Reger Beron for election to
the Sobio hoard of directors, He is managing director of The British Petroleum Company, and will replace Mr Peter L Walters,

chairman of BP. Mr Carls Walsh has been appointed managing director of ELF PETROLEUM (GB) and Elf Oil (GB) the refining and distribution affiliates of the Elf Aquitaine Group in the UK. He replaces Mr Hubert Lutz who will become chief executive of Elf's refining and distribution sector in Germany. Mr Lutz will be replaced as chairman of Elf Oil (GB) by Mr Jean Brunel, whn is the European refining and distribution manager for the Elf Aquitaine Group in Paris. · Mr Reto Jenatsch has been appointed general manager of Engineering and Universal

Finance Corporation, Geneva, a substidiary of Universal Engin-

eering Corporation, Berne, and

research. Dr. Edward A. Sziklas chairman of the board as well as has become assistant director of & Mr Gerald G. Probst, former president of Sperry Univac, has been elected chief executive officer of SPERRY CORP. Probst, with is president of the



Mr Gerald G. Probst

additional responsibility immediately. Mr J. Paul Lyet, chairman of the board, said: "In anticipa-tion of my retirement from Sperry this year, the board of directors planned an orderly top management transition in 1979 of the Swiss Bank Corporation. Office of the chairman. Mr Probat He was a member of the has been a key member of the executive committee of Losinger.

Dr Heinz Egil remains delegate of the board of directors of UNEFICO.

Sperry Research Centre. My office, with direct responsibility
for the corporation's five
operating divisions and the
Sperry Research Centre. My TECHNOLOGIES relinquishing of the post of chief RESEARCH CENTRE, East executive officer is a further Hartford, Conn., has appointed step to assure the continuity of Mr George F. Hausmann and Mr dur management and of our

INTERNATIONAL APPOINTMENTS

chief executiva officer of Sperry."
WARBURG PARIBAS BECKER-A. G. BECKER, New York, has appointed Mr Michael J. Rolland as a managing director in New York. Mr Rolland's responsibilities include mergers and acquisitions and

> Mr Ron Geddes has been appointed managing director of PROTECH INTERNATIONAL (SINGAPORE). He succeeds Mr ing to the UK.

general corporate finance for

● Mr G. J. Maier has been appointed to the board of BOW VALLEY INDUSTRIES, Calgary, as president and chief operating officer. He recently resigned as chairman of Hudson's Bay Oil and Gas Company. Mr D. K. Seaman, chairman and chief executive officer of Bow Valley will retinquish to Mr Maier the responsibilities of chief executive officer following the annual meeting in May. Mr Seeman, who founded the Bow Valley organi-sations over 30 years ago, will remain as chairman.

Mr Andrew G. Genor has been appointed vice president, finance and administration, at HONEY-WELL EUROPE SA, Brussels.

• Mr Ned Fowler has been named president of the Ideco division of DRESSER INDUS-TRIES, INC., succeeding Mr. Nick Klist, who left Ideco to Fowler was vice-president of product management for the Ideco division in Beaumont,

states that Mr Daniel Schmier has resigned as president and as a member of the board for personal reasons. Mr Abe president until the company completes the sale of its WTFN stock to H. B. Radio of New York, after which it is expected that the Swanton Corp. will be taking control of Friendly Frost. In addition to the presidency. Mr Chapnik will continue as treasurer.

Mr William James, new executive vice president, mining, for Noranda Mines, will become president and chief operating officer of FALCONBRIDGE NICKEL MINES on April 20 when Mr H. T. (Pete) Berry steps down from these two positions. Mr Berry, who is expected to retire at the end of this year, remains as chairman and chief executive officer. Mr James, one of Canada's top mining axecutives, is the first of the Noranda insider group to leave since control of that company was acquired by BRAS-CADE RESOURCES.

 NATOMAS COMPANY has appointed Mr. William Jaeger president-administration and control-for Natomas Coal Company.

• H. J. HEINZ COMPANY Pittsburgh, has expanded its board of directors to 18 mem-bers with the addition of Mr Richard B. Patton, who also was named a senior vice president of the company. Mr Patton has accept a promotion with served the last two years as an Dresser's compressor group. Mr area director of Heinz with: responsibility for the Heinz Canada, Hubinger and Weight Watchers subsidiaries

Mr Lars Wessiau, SKARDIA INSURANCE CO. deputy chief executive of the European mone and manager for the inter-national marine and aviation become deputy zone cine executive of the Asian Pacific Zone. He will be based in Hong Kong and be responsible by division, will from July I Skandia's operations in the Hoag Kong and Japan regions. Ar-Lars-Olof Nordström has an-ceeded Mr Wesslau as division

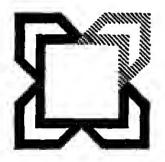
■ Mr Andrew W. Donnelly, vice president and managing director of European operations based in Brussels of the RALSTON PURINA CO., will be leaving to head the international opera-tions of the ALBERTO CULVER CO. in Chicago as its vice president international from May 1 Mr Glenn E. Penisten has been elected a vice president of GOULD INC., in addition to bis position as chairman of the board and chief executive officer of its subsidiary American Microsystems, Inc. (AMI).

Mr David T. Jahnston, senior vice president and directar of E. F. Hutton & Co., Inc., has been re-elected chairman of the board of governors of COMED.

DITY EXCHANGE INC. (COMEX). Mr Irving Redel was re-elected treasurer of the Exchange.

TEXASGULF INC. has elected Mr Albin Chalandon and Mr André Tarallo to its hours Mr Chalandon is chairman and chief executive officer of Societé Nationale Elf Aquitains (SNEA), while Mr Tarallo he senior vice president of SNEAS foreign operations division. RH, Aquitaine is the parent company of Texasguif.

New issue. These securities having been sold, this announcement appears as a matter of record only. April 1982.



Development Bank of the Philippines

(Incorporated in the Republic of the Philippines)

U.S.\$30,000,000 Guaranteed Floating Rate Notes due 1990

Guaranteed by The Republic of the Philippines

Lloyds Bank International Limited

- FujiInternationalFinanceLimited

Allied Banking Corporation

Ayala International Finance Limited .

Credit Lyonnais Hong Kong (Finance) Limited

London & Continental Bankers Limited

LTCBInternational Limited

Philippine Commercial and Industrial Bank

PNB International Finance Limited

Standard Chartered Merchant Bank Limited

Tokai Kyowa Morgan Grenfell Limited

FT INTERNATIONAL BOND SERVICE

YEN STRAIGHTS Issued Bid Offer day wask Yield Asian Dev. Bk, 8% 91... 15 100% 101% 40% 40% 8.63 Int.-Amor. Dev. 8% 91 15 101% 102% 0 -0% 8.63 Jepen Airlines 7% 87 ... 8 97% 97% 0 0 8.48 New Zaylend 8% 87 ... 15 100% 101% 0 0 8.09 World Bank 8% 92 20 700 100% 0 0 8.31

U.S. DOLLAR

STRAIGHTS

Anheuser-Sunch 189, 88 100

APS Fin. Co. 174, 89 ... 80

APS Fin. Co. 189, 89 ... 75

Armco 0/S Fin. 159, 86 50

SS9, SS9, SS9, 0 +04, 15,49

SS9, SS9, SS9, 0 +04, 15,49

O The Financial Times Ltd., 1982. Reproduction in whole

EUROBOND TURNOVER (nominal value in 5m)

Last week † † Previous week 5,792.8 7,764.9 Other bonds Last week..... Previous week 1,416.0

* No information available † Only one market maker supplied a price.

† Figures not available

is the yield to redemption of the mid-price; the amount issued is in millions of currency units except for Yen bonds where it is in billions. Change on week = Change over price a week

Denominated in dollars unless ntherwise indicated Coopen shown is minimum. C.dte=Date next coupon becomes effective. Spread = Margin above six-month offered rate (three-month; sabove mean rate) for U.S.

CONVERTIBLE BONDS: Use nominated in dollars makes otherwise indicated. Chg. day Change on day. Cav. date=First. date for conversion into shares.
Cnv. price = Nominal amount of bond per share expressed in currency of chare at convenium. rate fixed at issue. Prem=Percentage premium of the current effective price of acquiring most recent price of the shares. The list shows the 200 lates international bonds for which an adequate secondary marks exists. The prices over the past week were supplied by: Kredistbank NV; Credit Commercial de France; Credit Lyonnais; Commercia de France; Credit Lyonnais; Commercia de Commerc Internationale
Kredlathank Luxembours
Kredlathank Luxembours
Algemene Bank Nederland NV
Pierson, Heldring and Plerson
Credit Suisse/Swiss Credit Bank
Union Bank of Switzerland
Akroyd and Smithers; Bank
of Tokyo International; Banker
Trust International; Credit Commercial de France (Securities) mercial de France (Securitas).
Londom; Citicoro International
Bank; Daiwa Europe NV; Deltes
Securities (UK); EBC; EISI
Chicago; Goldman Sachs International Corporation; Hambrus
Bank; IBJ International; Ridden
Peabody International; Manufac Bank; IBJ International; Kidder Peahody International; Manutaturers Hanover; Merrill Ispain Morgan Stanley International; Nikko Securities Companion (Europe); Orion Royal Bank Samuel Montagu and Co.; Schillingvian Bank; Societe General Strauss Turnbull; Sumission Finance International; S. 5

Finance International: 5.
Warburg and Co., Wood Gundf Closing prices on April

UK COMPANY NEWS

Chas. Hill improves in second half

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Losses per £1 share are stated writing experience during 1982.

at 41.7p (2.8p). The dividend is It is to investment earnings that again being missed. The last the group will again be looking the group will again be looking to offset this decline, says Mr 2p net io respect of 1978.

Mr Alastair Milne, chief executive, says that 1981 was a significant year with a market again.

As reported March 4, group

cant year with a majority of the long serving directors standing down to make way for a new management team, following tha takeover by a consortium led by

Since the year end the group—which is engaged in civil engin-eering, building and property development, ship repairing, shipping and transportation—has disposed of its interests to Bristol Channel Line and acquired Octavius Hunt which makes smoke pesticides and allied pro-docts, and Cliffords (Bristol) a.

property company.

The directors anticipate that
these new companies will make
an increasing contribution to the group. Various management changes, reductions in workforce and aggressive marketing policy have beginning to bear fruit, and barring major setbacks give rise to optimism for the current year.

Mr Milne says. In 1981 some of the sectors in which the group operates were particularly, badly hit by the pardenary bady in a wine severe economic conditions, namely Jeffries, Avonmouth and Joseph Fish and Sons.

Turnover for the year was allown from £14.12m 10 £10.26m. Taxable insses were struck after toterest of £54,357 (£33.962)

There was a tax credit of fill 13 444 (£91,485), and after extraordinary credits of £82,099 (£8,713 debts), minority credits of £41,721 (£11,597) and preference divideods of £13,020 (\$200) the attributable losses emerged at £406,695 (£41,441).

ASSOC. NEWSPAPERS Associated Newspapers Group
NAME Of Associated Newspapers Group
Name of the State o

out i 32 15 per cent of the outstanding

Associated beneficially owned

GA again looks Slight fall at Wemyss Profit setback to investments

"It is fervently to be hoped ditions in both the UK and the that this painful alternative will u.S. in the opening months of be avoided," he says, but respectively. At the half year stage and Life Assurance Corporation acticipates a further deterioration in its worldwide understand whatever interested from the pear of the pear o tion in its worldwide under-

> As reported March 4, group pre-tax profits for 1981 rose nearly 15 per cent from £92.3m to £1049m, despite underwriting tosses almost doubling from £27m to £52,9m—a 31 per cent advance in investment income from £119.3m to £156.9m more than offset this.

Total surplus funds for 1981 stood al £557m and the worldwide solvency margin at the year end was 56 per cent, sgainst S9 per cent a year earlier. Retained earnings for 1981 were £45m, which represented 28 per cent of premium growth.

Mr Simpson sees no present signs of alleviation of increas-ingly competitive underwriting conditions worldwide. I cannot but express disquiet for the immediate future," he says. "If there is no early upturn in economic activity then reckless competition will be likely to lead to the possibly unpleasant alterto the possibly unpleasant alternative of a reduction in capacity.

Annual meeting in Perth, on May 5 at 11.30 am.

atand whatever vicissitudes wa

may face."
In the UK, Mr Simpson says there is clear evidence that the "capricious" claims incidence which has already driven some premium rates down to suicidal levels," will encourage even more reckless competition on rates. In the U.S., he sees no

on rates, no the U.S., he sees no real signs of any upturn in trading conditions.

Mr Simpson reports that a large percentage of new investmenl in the UK during the year was in fixed interest stocks and property, with equity investment confined to sectors with better than average prospects. Equity capital was also provided for a number of small unquoted companies.

In the U.S. new money was invested in the bond market with selective buying into common stocks.

lent year in relation to oew business for Yorkshire-General the life specialists of General Accident. Prospects for 1982 have been improved with the introduction of new products at more competitive rales.

Royal London ups bonuses

The reversionary bonus in the Ordinary Branch is lifted 40p to £5.20 per cept of the sum assured and by 30p to £3.50 per cept of the sum assured to the Industrial branch.

The company is also consolidaving some of the terminal beaus into a special reversionary bonus so that all with-profit policies in both branches, and not just current claims; may benefit from current investment

performance.
The bonus scale varies with the age of the policy up to £25 per cent of the sum assured in times the adjusted average the Ordinary branch and up to anoual pre-tax profits of Ryan

RECORD BONUS rates have. The terminal bonus scale is been declared by the Royal correspondingly reduced. But the remaining rates are now following the 1981 valuation. increased by an across the board £2 per cent of the sum assured. On Personal Pension Policies fer the self-employed, the guaranteed interest addition is 12 per cent

> WELBECK INV. Corsec Holdings, a subsidiary of Welbeck Investment, has acquired 85 per cent of Thomas Ryan (Colour Printers) for £159,000 cash.

In addition, Corsec has agreed to acquire the remaining capital in 1985 for a tash consideration equivalent to 15 per cent of five times the adjusted average annual prefer profile of Francisco Profile of P Thin that he stock, instead of cash, dividends, branch.

The thin the industrial for the three years coding becomes a first the industrial for the three years coding becomes 31, 1984.

Redemption Notice

City of Oslo (Norway) 5% Sinking Find External Loan Boods due May 1, 1985

NOTICE IS HEREBY GIVEN, pursuant to Fiscal Agency Agreement dated as of May 1, 1970 under which the above described Bonds were issued, that Citibank, N.A., Fiscal Agent, has selected by in the Sinking Fund, \$1,533,000 principal amount of said Bonds at the Sinking Fund redemption price of 100% of the principal amount thereof, ther with accrued interest to the date fixed for redemption. The serial numbers of the Bonds selected by lot for redemption are as follows:

BOND NUMBERS

						• • •		WILLIAM .						-			
M 62	2213	3810	1526E	7363	9356	9738	10464	1100	12106	1276	13213	14020	1472	15088	15981	17154	٠.
				7864		9766	10487	1101	2, 12166	1276	13214	14068	1472	15085	15989	17166	
		3815			987	9774	- 10469	11014	12203	12768		14091				. 17178	
		3817		7512	937	9796	.10472 .10477 10479	71114	2 · 10207 12309	1277		14090	1473	15093		17187 17224	
21a	2258	3931	-5278	7514	9879	9818	10479	11137	7 - 12213	12778	3 1341G	14119	14742	15094	16041		
257					9381	. 30000	IDANI	11174		12799	13421	14121	14744	15096			
		3825		7679	9888	996	10487	11182	12228						16046		
299		3830		7686		9987	10492	11249		12823				15107			4.
407		3632		7688		9993	10495	11260	12249	12829	13432	14129	14756	15710	16053		
409		3884		7724			10497	11262	12250				14762				
470	2881	2000	5507 5507	7726	9402									· 15114 15336	1606D 16062		
425	2411	3840	5513	7730			10603								16064	17395	
400	2432	20.00	2010	7803	9410	10003	10508	11274	12268	18850	13446	14139	14775	15347	16066	17402	
482	2435	3844 3846	5541 5544	7672			10610			12853 12855	13448	14141	34777		16070		
		384B								12859	13452	14154	14788		16107 16125	17411 17436	
640	2531	3850	5553	7879	9422	10018	10523	11206	12298	12876	13456	14163	14793	15586	16132	17448	٠.
755	2533	3852	5568	7881	9431	10027	10626	11314		12981	13458	14165	14795			17450	
767	2090	3256	5578	7884 7943	9435	10032		11316	12302	12883	13619		14797 14799	15542 15544		17458 17516	
- 980	22719	3661	5584	8036	9438	10043	10536	11325	12306	12884	13637	14178		15546	16211	17520	
. 3000	2.02	223	5671	. 20741	. 19440	3000	10000	11345	12306 12363	12897	13891	14179	14804	15549	16213		
1000	2626	3865	3073	8044	9442	10047	10544	- 11348	12367	12899	19693	14181 -14193			16271 16278	17546 17629	
1004	2832	3672	5700	8054	9453	10054	10549	11352	12371	12905		14219			16325	17633	•
1007	2826	3660.	5715	8139	9457	10067	10558	11355	12373	12918	13598	14221	74818	15571	10327	37643	
			6717	8346	9471	10062	10574	11359	12386	12920	18701	14224		15574	16829	17 64 5	
	2999 2908	3855	5719 5757	8363 8366			10576	11361	12391 12396	12922	13704 13707	14257 14259	14821 14823	15577 15579	16340 16967	17759 17763	
1082				8357	9484		10586			12927	13709	14264	14826	15585	16389	1776	
1084	2938	3954	5983	8359	9486	10079	10592	11375	12422	12930	13711	14313	14829	15587	16371	17797	
			6004 6085	8363	9488	10162	10594	11388	13424		18714 13716	14315	14831 14841	15589 15594	16373 16381		
1100		4010			2430	10185 10283		11393	12433	12937	13751	14317 14348	14848			17806 17808	
1111	3113	4058		8373	9498	10235	10602	21419	12439	12947	13753	14350	14850	15596	76265	17814	
1128	3754	4073	-6119	8378	9503	10239	10606	11421	12444	12949	13755	14352		15601 15603	15368	17812	
1127	3158	4111	RISE	95.10	9514	10242	10818	11486	12455	12962	13762	14357 14859	14854		16393 16402	17828 17825	
1188	3268	4313	6160	8534	9516	10245	30620	11488	12461	12964	13765	14361	14861,	15611	16405	17831	
1190	3317	4330	6227	. 3638.	9518	10207	10829	11490	12463	12975		14367	14863		16407	18125	•
1200 1212	3336	4844	6297 6362		9520	10251	10631 10633	. 11492 11526	12469	12977	13770 13797	14369 14373	14866 14868	15618 15620	16411 16413	18121 18196	
1214			6425	8545	9684	70074	7.0990	11628	. 19471	12980 72982	13808	14875	14886	16623	16422	18140	
1281	3354	4704		8547	9537	70276	-10842	11533	12482	12985	13808	14377	14892	15625 15630	16454	18145	
1201 1200		4750		8549 8551		10275	10843	11567	12485 12491	12987 12990	13878	14380	14894 14896		16456	18150 18158	
3410	3030 3360			8553	9537	10291	10868	11565	12503	12992	13886	14388	14898	15725	16461	18201	
1412	3362	4757	6439	8555	9539	10293	10870	11567	12511	12994	13688	14393	14905	16727		18218	
1414	3365	4759 4802.			9547	10296	10872	11581	12517	12996 12999	13890	14897	14907 14910	15740 15756		18221 18230	
1494	3360 3360	4895	6479	8561		10300	10878			13002	18895	14410	14913	15759	16485	18252	
1497	8377	4858	6480	8553	2559	10306	10680	11589	12525	13004	12000	14414	14915	15761	16498 .		
1817 : 1520	2881, 3389-		6464	.6577 .8582	9564 9565	10306	10883	11221	12528 12530	13006	13902 13904 13906	14416	14917 14919	15764 15768	16495 16497	18268 18262	
		4888	6488	8584	9569	10312	10887	11597	12537	13018	13906	14474	14924	15770	16514	16269	
1557	3399	4865	6514	8697	9571	10316	10889	11600	J2542	13020	13908	14480	14926	15772	16516	18271	
1610	8401		6626		9573	10318	10891	11615	12546 12548	13022	13912 13914	14482	14928 14930	15774 15784	16250	18275 18280	
1749	8408	40US 4300.	0000. 8673	8797 8801		10323 10325			12550	13026	18916			15787	16525	18530	
178K	8412	4910	6700	2003	9579	10327	10897	11627	12561	13028	13921	14586	14934	7,57789	16528	18379	
1767	3414	4912	6702	8846	9533	10329	30900	11687	12566	13039	13923	14589	14937	15794 15797		1840B . 18412	
1770	317D	4014	6914	2897 2899	9685	10335	TOOOL .	11540	-13568 19670	13043			14948	1589t		18426	
1799. (1622	RAZZZ RAZZZ	4919	7034	8950	9589	10341	10907	11808	12584	19071	13937	24801.	14950	15897	16538	18178	
1639		4984 -	7050 '	8052	9603	J0343	30910	11805	19501	18073	13939	14604	14953	15904	16541	1848I	
1841						20845	10916	11893	12594	13075	12844	14608	14955		16543 16548	18485	
1678	3870	216E				10347 10352	100519	71994	12596 12598	18095	12050	14610	14959	15917	16654	18488	
1911 : 1913 :	1006	K192	7104	9243	9896	10868	10934	11926	22600 12602	13097	13963	14618	14962	15020	16556	18604	
		5184	7121	9264	9638	10972	10926	11928	12692	18109	13957	14622	14986	15022		18542	
1920	5770	5186.	7229	9266	964I	10378	10928	11981	12602 12611 12613 12636	18118	13961	14624	14968	15925	18574	18550	
1925	3772	5188	7143	9266	2644	10381	10930	12011	12636	18117	13966	14646	14979	16929	16577 18580	18557 38570	•
1947	57'64c	PIAN.	LIEE.	0075	0440	30997	10935	12020	12645	13121	12989	14849	14977	15931		18577	
1681 1	70	CTOG .	71 AN	0000	Q45.1	30407	HUNG!	1202	1204/	731.20	19812		14985	15939	16585	,	
7070 4	00001	EBOND 1	-	40004	QCE.Q.	7/14/13	11.004.2	12030	T5000	T219 5	TSALO	1400/	Tenn	15046	16596		
1072	775A	691 I	7187	50577	HEED IN	10415	TIME.	THIRD	12653 12657		13977 13097		14992 14994	15054	16805 . 16840		
1975 :	3700-	5215	7195.	3805	2003	10421	10947. 10951	13063	39859	13175	13987 13990	24889	14996	16954			
1982	2790	5219	7205	9321	9867	10128	10951 10958	12005	12659 12651	79177	79600	7.167.4	TEAM	15956	16865		•
2006	1792	5292	7276.	9323	9689	10430	10955 .	12079	12677	13179	18994 14000	14676	15012		16908		:
2090	3794 J	5253	7285	9325	9681	10632	10957	12001	12021	19195	14000	14700	15015	15960 16982	10915	٠.	
3055	7796 1	5352	7344	200	9565	10434	70000 T0339	10005	39210	100 400 100 1000				15962 15964			
MOR S	1902	STARE !	350	9337	9690	10458	20972	12090	12784	3.8200	14014	14713	15073	15972	17070		

On May 1, 1982 there will become due and payable upon each Bond selected for redemption the said redemption price, together with interest accused to the date fixed for redemption. Payment of the redemption price of the Bonds to be redeemed will be made in such coin or currency of the United redemption price of the Bonds to be redeemed will be made in such com or currency of the United States of America as at the time of payment is legal tender for the payment of public and private delets thereon, upon presentation and surrender of said Bonds, with all coopons appertaining thereto maturing after the date fixed for redemption, at the Corporate Trust Office of Chibark, N.A., Municipal Bond Processing Window; 20 Exchange Place, 16th Floor, New York, N.Y. 10043 and subject to applicable laws and regulations, at the main offices of Cithark, N.A., in American, Brossels, Frankfort (Main), London, Milan and Paris. Psyment at the offices of Cithark, N.A. in Rumpe referred to above will be made by check decays means a back in New York City or have recorded as a dollar account. will be made by check drawn upon a bank in New York City or by a transfer to a dollar account main-tained by the payer with a bank in New York City.

On and after the date fixed for redemption interest on said Bonds will cease to accrue. Coupons due

May 1, 1982 should be detached from the Bonds and presented for payment in the usual manner.

March 30, 1982

For the CITY OF OSLO (NORWAY)

CITIBANK, N.A. as Fiscal Agent

Investment

from £222,000 to £214,000 for the half year to March 31, 1982 and earnings per £1 share were 0.4p lower at 9.5p. The interim divised and the share were the share were of the share were o total at 20p per share.

During the six mooths, further progress has been made in the restructuring of the portfolio, so concentrate on abares with

BOARD MEETINGS

The following companies have netified dates of beard mostings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are net available as to whether dividends are interms or finals and the aubdivisions shown below one based mainly an last year's unstable. TODAY

Interims: Cedar Investment Trost, Equity Income Trust, Peters Stores.

Figure 1 Scotland, Serton Group. Oblay Strumeatic, Minet, Northern Engineering Industries.

FUTURE OATES

FUTURE OATES
Interiors:
Ingenidoe arick May 11
Gleson (M. J.) May 14
Ingeli Industries April 14
Ingeli Industries April 14
Ingeli Industries April 14
Finals:
Aberthaw and arislot
Channel Portland Cement April 15
Ayrahize Matal Products April 30
Barrow Hepburn April 14
Clarke (Clement) April 26
Industries Matal Products April 14
Clarke (Clement) April 26
Hawker Siddeley April 26
Hawker Siddeley April 21
Hyman (I. and J.) April 26
Lament April 20

natural regource Income io the period has been

higher than anticipated, owing to the substantial level of liquidity which has been maintained, Gross reveoue was marginally

lower at £382,000 (£385,000) des-pite an increase in unfranked income from £156,000 to £162,000. Management expenses 100k £35,000 (£26,000) and tax accurated for £133,000 (£137,000). At the half year, total assets amounted to £9.85m (£10.21m at September 30, 1981) and oet asset value, excluding the interim dividend, was reduced at 438p (454p);

General Investors

AFTER-TAX reveoue of Geoeral Investors and Trustees Investment Trust, locreased from £1.1m to £1,23m for the year eoded January 31, 1982. Total income

amonoted to £2.97m, compared with £2.38m.

Stated earnings per 25p share rose by 0.85p to 7.89p and the net dividend total is increased by 10 per ceof to 6.6p (6p) with a final of 4.1p (3.8p). A onefor-one scrip

Managemeot expenses ioterest totalled £990,756 (£628,312); tax 100k £748,591 (£652,350) and ordioary dividends absorbed £1.02m (£0.92m). Net asset value per share was bigher at 243.4p (225.9p) after prior charges at par, and 247.7p (230.6p) after these charegs at market value. Investments were valued at £39.6m (33.6m).

NOTICE TO HOLDERS OF

TOSHIBA CORPORATION (Formerly Tokyo Shibaura Electric Co., Ltd.) (Tokyo Shibaura Denki Kabushiki Kaisha) 6%% CONVERTIBLE BONDS DUE 1990

REFERENCE IS HEREBY MADE to the Notice of Redemption and Termination of Conversion. Rights relating to the abovementioned Bonds which appeared in this publication on March 25, 1982.

this publication on March 25, 1982. The reported closing prices of the shares of common stock of the Company shown in the last paragraph of such Notice should have been up-dated as follows:
For the ioformation of the Bondholders, the reported closing prices of the shares of common stock of the Company on the Tokyo Stock Exchange during the period from January 22, 1982 to March 17, 1982 ranged from a high of Yen 395 to a low of Yen 293 per share. The reported closing priceof such shares on the Tokyo Stock Exchange on March 17, 1982 was Yen 296 per share.

TOSHIBA CORPORATION By: The Bank of Tokyo Trust Company as Trustee

Dated: April 13, 1982

ENERGY RESOURCES & SERVICES INCORPORATED

Net Asset Value 31st March 1982 \$6.78 per share (unaudited)

STOCKHOLOERS FAR EAST INVESTMENTS INC.

Net Asset Value 31st March 1982 \$1.73 per share (unaudited)

THE TRING HALL USM INDEX 118.3 (+0.9) close of business 8/4/82 BASE DATE 10/11/80 100

Tel: 01-638 1591

LADBROKE INDEX Close 560-565 (+1)

at Rand London

miniog groop, Rand Londoo Corporation, in which Burnett suffered a sharp profil deteriora-December 31, reports Thomas

Sparks from Johannesburg.
Firsthalf pre-tax operating profits have failen to R 1.14m (£609,000). In addition, management has decided to charge an additional R 3.3m operations to cover expected adverse costs in the final three months of the present nine-month financial period which ended oo March 31 1982.

The company's year-end has been changed to coincide with that of its new Britisb parent.
In the six months ended
December 31 1980, pre-tax
operating profit was R 4.24m and a pro-tax profit of R 4.96m was earned in the year coded June 30_1981.

The company's troubles stem from its coal interests. At the start of 1980, Rand London valued its coal assets, placed them in a newty-formed subsidiary, Rand London Coal, and sold shares in it to shareholders.

The net effect was that sharerhe net effect was that share holders bought their own company. Ioitial expectations of Rand London Coal failed to materialise and cash constraints obliged. rogramme of mine openings,
One small anthracite mine,

because of poor market conditions. More importantly, however, it bas proved impossible to cootinue exploiting the Rempslust mine by mechanised methods and it is being converled to hand-got working at considerable expense.

In addition to the company's

mining problems, losses were sustained by the 50 per cent-owned Gheot Coal Company which operates a coal terminal at the Belgian port of Ghent. A major reorganisation of Rand Londoo's operations is in progress to reduce costs.

In order to provide operating fuods a steel merchanting subsidiary has been sold for

R 8m resulting in a book tess of

QUEENS MOAT

Sharebolders of Queens Most Houses, the hotel group, approved the acquisition of 26 at an extraordinary meeting on Thursday. The meeting approved the £30m package to finance the acquisition including a rights issue of 41.6m shares and £3.85m in convertible toan stock.
Letters were sent out with
details of provisional allotment

to ordinary shareholders and the holders of 101 per cent conmaterialise and cash constraints vertible unsecured loan stock chilged the company to 1981/82. Dealings in the new revise drastically its planned ordinary shares and new convertible stock will start on Tuesday.

BASE LENDING RATES

A.B.N. Bank 13 %
Allied Irish Bank 13 %
American Express Bk 13 %
American Express Bk 13 %
Amro Bank 13 %
Henry Ansbacher 13 %
Arbuthnot Latham 13 %
Associates Cap. Corp. 13 %
Banco de Bilbao 13 %
BCC1 13 %
Bank Hapoalim BM 13 %
Bank Leumi (UK) plc 13 %
Bank Leumi (UK) plc 13 %
Bank Street Sec. Ltd. 14 %
Baok of NS.W. 13 %
Banque Belge Ltd. 13 %
Banque du Rhnne et de la Tamise S.A. 133 %
Barclays Bank 13 % Edward Manson & Co. Midland Baok Samuel Mootagu Morgan Grenfell 13 c National Westminster 13 c Norwich General Trusi 13 c Barclays Bank 13 %
Beneficial Trust Ltd. 14 %
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Brit. Bank of Mid. East 13 %
Brown Shipley 13 % P. S. Refsoo & Co. 13 % Rnxburghe Guarantee 13 c. E. S. Schwab 13 %
Slavenburg's Bank 13 %
Staodard Chartered 13 % Caoada Perm't Trus:... 1317 Castle Court Trust Ltd. 1317 Cavendish G'ty T'st Ltd. 1517 13 7 Trade Dev. Bank 13 Trustee Savings Bank 13 TCB Ltd. 13 % United Bank of Kuwait 13 % Cedar Holdings 13 %
Charterhouse Japhet 13 %
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Cittbank Savings 122 %
Clydesdale Bank 12 % Whiteaway Laidlaw line Williams & Glyn's 13 or Wintrust Secs. Ltd. 13 or Cittoank Savings 13 % Clydesdale Bank 13 % C. E. Coates 14 % Consolidated Credits 13 % Members of the Accepting Houses Committee 7-day deposits 10%, 1-month 10.05%, Shert term (8,000-12 month 12.0%) Co-operative Bank ... 13 % Coronthian Secs. ... 13 % The Cyprus Popular Bk. 13 % Duncan Lawrie ... 13 % 7-day deposite an sums of, under £10,000 to \$15,000 up to £50,000 11*, £50,000 and over Eagil Trust 13 %
E.T. Trust 13 %
Exeter Trust Ltd. 14 %
First Nat. Fin. Corp. 15 %
First Nat. Fin. Corp. 15 %
Robert Fraser 14 %

Call depusies £1,000 and one

21-day deposite over \$1,000 1141.

Mortgage bese rate.

LOCAL AUTHORITY BOND TABLE

Authority (telephone number in porentheses)	Annual gross interest	Interes: pay- able	Minimam Sum	Life of bond
nowsley (051-548 6555)	"გ 13 <u>;</u>	≟-year	r 1,000	Year 4.8

This advertisement complies with the requirements of the Council of The Stock Exchange.

U.S. \$50,000,000

Transco International N.V.

151/4% Guaranteed Notes Due 1987 With Warrants to Purchase U.S. \$100.000,000 154% Guaranteed Notes Due 1987

> Unconditionally guaranteed as to payment of principal, premium (if any) and interest by



(Incorporated in Delaware)

The following have agreed to subscribe or procure subscribers for the above Notes with Warrants:

Credit Suisse First Boston Limited

Merrill Lynch International & Co.

Lazard Frères & Co.

Banque Bruxelles Lambert S.A.

Manufacturers Hanover Limited

J. Henry Schroder Wagg & Co.

Swiss Bank Corporation International

Union Bank of Switzerland (Securities) Limited

The U.S. \$50,000,000 15½° Guaranteed Notes Due 1987, issued at 100 per cent., the Warrants and the U.S. \$100,000,000 15½° Guaranteed Notes Due 1987 to be issued upon exercise of the Warrants have been admitted to the Official List of The Stock Exchange, subject, in each case, only to their issue. Each Note constituting the ioitial issue is beiog issued with two separately transferable Warrants, each entitling the holder thereof lo purchase one Note, which will not be issued with Warrants, at 100 per cent, of its principal amount. Interest is payable annually in arrears on 15th April, the first payment being made on 15th April, 1983.

Full particulars of the Notes and the Warrants are available in the Extel Statistical Service and may be obtained during usual business hours up to and including 27th April, 1982 from the brokers to the issue:

Cazenove & Co., 12 Tokenhouse Yard, London EC2R 7AN

13th April, 1982

MEMORANDUM TO:

The 500 Largest Commercial Banks in the World

You are responding to the questionnaire from The Banker with your 1981 balance sheet figures. May we remind you that The Banker's unique compilation by asset size is widely acclaimed by central and commercial banks worldwide. Using 1981 balance sheet data the top 500 ranking analyses will this year contain even more essential comparative information and will be published in the June issue.

THE FULL TOP 500 ANALYSES WILL INCLUDE:

THE 500 LARGEST COMMERCIAL BANKS IN THE WORD - BY ASSET SIZE (using U.S. accounting methods with contra items deducted)

TOTAL DEPOSITS — CAPITAL & RESERVES — TOTAL REVENUE PRE-TAX EARNINGS — %, PRE-TAX EARNINGS ON ASSETS — % PRE-TAX EARNINGS ON CAPITAL — % CAPITAL ASSET RATIO — % REVENUE ON ASSETS. PLUS NUMBER OF STAFF.

WHO ARE THE TOP 100 BY — DEPOSITS, CAPITAL & RESERVES, REVENUE, PRE-TAX EARNINGS, PRE-TAX EARNINGS ON ASSETS, PRE-TAX CAPITAL/ASSET RATIO

WHO ARE THE TOP 50 BY - REAL CROWTH IN ASSETS, PRE-TAX EARNINGS (measured in local currency terms)

PRE-TAX EARNINGS PER EMPLOYEE

Banks and institutions serving the financial community worldwide retain and use this essential work of reference throughout the year. Clearly this presents an outstanding opportunity to advertise your correspondent banking services and experience in the international or domestic banking sector. If you would like full details please contact immediately:

The Marketing Director, The Banker, Minster House, Arthur Street, London, EC4 Telephone: 01-623 1211 Telex: 8814734

Extra MDs at Laing

Mr David Bottom and Mr BROWN on April 19 as group Oliver Whitehead have been spoolnied additional joint managing directors of JOHN LAING Group.

CONSTRUCTION, with respective responsibilities for building tive responsibilities for building in the UK and for engineering at home and overseas.

Mr A. E. Hepper bas been appointed a director of THE CARDINAL INVESTMENT

Mr Douglas Mulrhead has been appointed chairman of LESLIE & GODWIN (SCOT-LAND). He was previously UK chairman of P.A. Management Consultants.

Mr George Veltch has been assumed a partoer of BAILLIE GIFFORD & CO., iovestment

Mr Bruce Leeming has been appointed deputy managing director of London metal commodity hrokers, RUDOLF

Sir Neil Shields, who was re-cently appointed a member of the COMMISSION FOR THE NEW TOWNS, has taken over as chairman from the beginning of this month. He is a director of Central and Sheerwood.

M. B. S. Cooper has been appointed managing director of JOHNSON MATTHEY CHEMI-CALS. He succeeds Mr F. D.
Barker who, while remaining a
director of Johnson Matthey
Chemicals, has relinquished his post as managing director to con-centrate on his work as divisional director of the chemicals and refining division. Mr Barker has been appointed chairman of Rare
Earth Products in succession to
Dr J. E. Hughes who has resigned. Dr Hoghes is deputy
managing director of Johnson
Matthey. Mr Cooper and Mr Matthey. Mr Cooper and Mr J. W. E. Penningtoo have been appointed directors of Rare Earth Products, a wholly-owned subsidiary of Johnson Matthey Chamicals.

PRIVATE PATIENTS PLAN has appointed Mr Brian B. Brown, as general manager of the PPP Medical Centre, W1.

Mr Rex Chester, chairman of Donald Macpherson Group, has been slected president of the PAINTMAKERS ASSOCIATION OF GREAT BRITAIN; be succeeds Mr Derrick Johnson of ICI Paints division.

Sir Ian Trethowan is to suc-ceed Lord Plummer as chairman of the HORSERACE BETTING LEVY BOARD when be retires on September 30. Lord Plummer has been chairman since January 1974. Sir Ian retires as director-general of the BBC in July— his appointment will be initially for three years.

Mr A. G. Bruce joins JOHN director from May 1, 1982.

XZIT (G.B.), East Malling, Kent, has changed its name to Darcy Products. Mr J. W. G. Proctor takes over as managing director in succession to his father, Mr Gerald Proctor, who died last year.

URWICK ORR & PARTNERS has appointed two directors of operations: Mr W. Thewits, director UK-North, and Mr J. G. Keeble, director UK-South-

Mr Tony Grayson has been appointed managing director of J. E. MATTHER & SONS, Leeds, in succession to Mr Tom Hewitt. who has retired. The company is a member of the Matthew Clark Group.

Professor Sir Peter Hirsch has been appointed a part-time member of the UNITED KING-DOM ATOMIC ENERGY AUTHORITY for three years from April 1. He is Professor of Metallurgy at the University of Oxford.

Touche Ross & Co. UK partner Mr Kenner Beecroft has been appointed regional partner, Africa by TOUCHE ROSS INTERNATIONAL (TRI). He will continua as secretary general of the TRI European Group.

Mr D. G. McBeath bas been appointed technical director, animal health division. HOECHST UK, following that ratirement of Mr J. R. Hepple.

At WILLIAM BAIRD Mr A. R. McCosh and Professor Roland Smith will retire on May 20, when Sir Russell Fairgrieva will be recommended for alection as

Mr Arthur C. Richards has been appointed to the board of TSB TRUST CO. Hs was United Dominions Trust chief executive, and was appointed to the board of Trustee Savings Banks (Holdings) in April 1981.

Mr John Durden bas been appointed contracts director for the Midlands and Mr Jan Forrest cootracts director for London and South East on the board of DELTA CONSTRUCTION CO., Cambridge.

Mr Kerry St. Johnston has been appointed to the board of Overseas Containers from April 13, 1982, and will replace Sir Ronald Swayne as chief executive on May 7 1982 and as chairman on August 1, 1982.

WHITEHALL PRESS has

The fat that grows out of peace of mind

BY RECHARD LAMBERT IN NEW YORK

IF YOU TOOK all the people employed in the U.S. insurance industry and laid them from end to end, they would stretch from the southern tip of Manhattan by way of the George Washing-ton Bridge and the New Jersey Turnpike to a joint just short of Salt Lake City. It seems like a lot too many.

The banking industry, which handles three times as much money and many times more transactions, makes do with about 250,000 fewer employees than the 1.9m in insurance. The advent of the microchlp which you might have thought would have brought enormous savings in paperwork—has not yet even checked the growth in the work force.

The theme of a witty and thought-provoking new book by Andrew Tobias is that the U.S. insurance industry is over-weight and inefficient. This argument is built around the idea that, in some ways, insur-ance is analagous to banking. ance is analagous to banking.
Banks and insurance companies
are both financial intermediaries. But you are allowed
to withdraw from a hank 100
per cent of what you deposit,
the amount you get back from an insurance company depends on your bad luck.

The insured as a group will wind up gotting back much of what it put in, but just how much each individual can draw ont depends on whether he or she has to make a claim.

But what kind of a bank is it that gives you back 65 cents in the dollar? That's how the overall repayment comes out on motor insurance. In other classes of insurance, the proportion held back for expenses, overheads and profit is even greater.

In flight insurance (which Tobias evidently thinks is utter trickery), the payback is 10 cents in the dollar. Some will get more, most will get nothing, but on average the company retains 90 cents of every dollar on this class of business, plus interest earned on premiums.

Put another way, U.S. motor insurance premiums amount to some \$40bn a year, and investment income on this money might raise the gross income to roughly \$44bn. Of that sum, only \$20-\$25bn come back to the public.

Not that the money returns effectively. A recent survey of motor accidents suggested that a person who lost up to the equivalent of \$2,500 received payments of more than \$2 for every \$1 of economic loss-

those in greatest need-received less than \$1 back for

each \$1 of economic loss. Tobias has some unkind words about U.S. insurance managers, especially in the mutuals who are not constrained by shareholders, and who do not live as austerely as their counter-parts in Scotland. "This is not to say that mutual manager are incompetent of dishonest

says Tobias dryly.

"Theirs is a noble calling, not unlike religious or government service. It just pays

This is entertaining stuff-yet the idea of such large-scale inefficiency is quite hard to swallow, especially in a con-sumer-oriented society like that of the U.S. The costs of entry to the industry are not high, and the returns can be very strac-tive. Why hasn't competition sweated the fat out of the industry.

Tobias has a number of explanations. The industry has a long history of cartels. The fire insurance business, for instance, grew up as a massive exercise in price-fixing. Insurance prices, especially for life policies, are very difficult to evaluate and compare. Federal regulations largely exempt the insurance sector, and state regulators are kssn to keep even inefficient companies in business, lest policyholders be stranded.

Most important may be the fact that aggressive marketing plays an important part in personal sector business, and customers are often more cuscerned about peace of mind than about immediate dollar values ("Well, ma'am, if you can't afford five dollars a month, you certainly can't afford cancer.")

Yst times are changing. The traditional life insurance classes have been knocked in the last year or two by the impact of high inflation and aggressive: non - traditional competition. High interest rates -have changed established yardsticks in the property casualty sector almost out of recognition, and s marked deceleration in economic growth has brought a new wave of international competi-

But if the book's points are less sharp than they might have been 10 years ago, its pen-ultimate chapter, "How Goil Would Restructure the Insurance Industry." is still required reading for insurance executives and regulators everywhere.

The Invisible Bankers by whitehall press has announced the appointment of Mr Alan Wells as joint managing director from May 1, 1982.

The invision barriers by Andrew Tobias, published in the those who suffered greater U.S. by Linden Press/Simon and economic losses — presumably Schuster, \$15.50.

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And, of course, complete pipelines that bring oil and gas from remote sources to the centres of consumption. Designed and constructed by Mannesmann,

Ask the man from Mannesmann

whether with our own or external know how always with creativity and a strong.

personal interest that gives the performance an unmistakable signature.

four colours, are examples of our performances in this held.

THE QUEEN'S AWARDS FOR EXPORTAND **TECHNOLOGY**

WEDNESDAY APRIL 21 1982

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As Europe's business newspaper, the Financial Times is the logical choice for conveying your success to the business elite of the world.

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> R. W. Roe Financial Times Bracken House, 10 Cannon Street, London EC4P 4BY Telephone: 01-248 8000 Ext 4079

FINANCIAL TIMES EUROPES BUSINESS NEWSPAPER

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Engineering contractors to the

oil, gas, chemical, process and power generation industries.

William Press Group, Tel 01-353 6544

AROUND THE

INDUSTRY

QATAR'S minister of industry

and agriculture has just opened the Hempel Group's fifth factory

in the Arabian Gulf at Doha,

the capital of the state of

Quatar. It is the first paint manufacturing plant there and

is a joint venture partnership

between the former Hempel agent, Mubarak Bin-Saleh al-

Khulaifi and Sons and Kuwaiti

THE CEMENT and Concrete

Association's next Advanced

Concrete Technology course will

be held on October 11-29 this year and May 2-20 1983 at

Fulmer Grange Conference and Training Centre, near Slough. More from the C and CA at 52 Grosvenor Gardens, London

ANGLIA LEAD Roofing is

extolling the advantages of lead

roofs with the publication of a

ten-page brochure which says

that such a roof will last 100 to

150 years and, even when it has

reached hie end of its useful

lif, the product can be recast.

The company says it is unique

in using an automatic casting

bed, ensuring its reputation as a

leading specialist in lead

A WASTE water treatment plant

for the City of Grande Prairie.

Alberta, is worth £Sm to WIMPEY CANADA which has

just started work on the project with completion aimed for

The scheme calls for the con-struction of process and administration hulldings and the

supply and installation of all

mechanical, process, electrical and instrumentation equipment.

Canada is a £630,000 job for Bramalea of Toronto, covering

stage one of the Carlton Village project at Markham, requiring

his own views and not those

A second contract for Wimpey

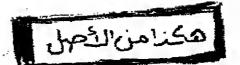
UK CONTRACT

OVERSEAS

machine with an orthodox sand

and Danish interests.

SW1 (01-235 6661).



BUILDING AND CIVIL ENGINEERING

Construction outlook not so black |Improvements boost worth £500m

FOLLOWING the disastrous brighter outlook yet expects anything like this eize. The more ture White Paper and, in parperformance of 1981, construct advances to be made in both tion output this year will public and private housing stabilise and lead to modest activity. gains in 1983 and 1984, accord— By the end of last month ing to the latest forecasts from there had been no significant the National Council of Build- real increases in output but the ing Materials Producers (BMP). rest of the year promises more.

The BMP's director general, activity and substantial progress. Mr Nigel Chaldecest, who has on non-housing work is exjust presented the report by pected in the ensuing two years,

bave since been signs of a recovery. "We believe that in Government expenditure on construction work in 1982-83 year and for the next two ing 24 per cent and 19 per years," he added. cent—which are two of the pro-Output in the construction grammes which had the largest

year, with two years buoyancy becomes murkier. The EMP panel says it is the local authorities themselves month in order to allow comment being cautious in projecting a are planning for an increase of on the Budget and the Expendi-

though the severe winter per cent and 4 per cent in weather was a setback for some overall volume in 1983 and overall volume in 1983 and

industry plantmeted by 12 per underspending in 1981-82. The cent last year and although it major rise within transport is expected to stabilise this investment will be on local authority roads (nearly 40 per

modest rise of 10 per cent in eash spent on trunk roads assumes no underspending which, given the record of this programme, is most improbable. A small real increase in spending by councils on road maintenance planned.

The BMP panel says that Britain's financial institutions world") can meet the demand for home loans that a recovery in the housing market would bring. provided that no restrictions are

put in their way.
BMP believes that growth of the home loan market is likely greater staying power than last ties become concerned about the availability of loan finances for industry to rebuild its working

Laing and Cruickshank delayed cent). its quarterly review on punding.
But there is no evidence that materials and construction for a

ticular, to gauge the trends in the housing market more readily. The outcome is a declaration that private housing once again appears to be staging a revival,

Householders are rejuctant to commit themselves after last the most sophisticated in the year's false dawn but, in contrast to 1981, this year's Budget has been well received largely because it has facilitated a reduction in mortgage rates.

during the opening months of

The stockbrokers believe that the 1982 recovery will have to be curbed when the authorities become concerned about the private housing starts from
availability of loan finances for 117,000 to 130,000 in 1982, and 45-150,000 in 1983.

They do not think that the Government's forecast increase in 1982-83 capital spending will have any marked effect on public housing starts, though, and say that output in this sector must continue to fall in 1982.

DEBORAH PICKERING | suggest that this area of activity

HIGGS AND HILL BUILDING ments in Gwent and mid-

ENLIGHTENED self interest- could, by next year, account for out of its total projected lendbehind last week's launch of Campaign '82 by the Federation of Master Builders, the Brad- ant than new housing output. ford and Bingley Building Society and timber and buildevidenced by a buoyancy in sales ing components group Magnet and Southerns.

"Helping builders to belp themselves" is one of the slogans hehind the campaign which aims to create a workload of some £500m, via home improvement work, to help the building industry out of its currently depressed state. But both Bradford and Bingley and Magnet were also happy to concede that there was something in it for themselves.

The campaign comes at a time when repair and maintenance work has become one of the mainstays of the UK construction sector and the latest fore casts from the National Economic Development Office

Glamorgan are worth £1.3m and there is a £350,000 new primary

school contract at Pontypeo

senior citizens at Pontnewydd.

Again in Gwent, a £600,000 contract is to huild homes for

In London the company will

construct shops and offices at

Borough High Street, SEI for the Special Trustees of Gny's Hospital; undertake refurbish-ment of Fulton House for the

Iron Trades Mutual Assurance Company (£im); reroof and

refurbish the Neptune Hall of the National Markime Museum

At the Eastern Docks at Dover, Wallis will carry out refurbishment of the booking

hall facilities for a further £im.

and in Tunbridge Wells, Kent, another refurbishment scheme

for Legal & General Assurance

(Pensions Management) is worth

Two contracts, together worth over £500,000. are for the restoration of the Chamber ceiling of the House of Lords

where the company will be resoonsible for supplying and

fixing new joinery and structural

FIVE CONTRACTS (total value

25m plus) to boild honses, bungalows, flats and flatlets in

Liverpool, St. Helens and Man-chester have recently been awarded to Boskalls Westminster

Largest of the three projects

located in Liverpool, is the erection of 94 dwellings at Barlows

Lane for the Rodney Housing

Construction.

for the PSA (£350,000).

UK CONTRACTS

projected, clearly exists and what the three proponents of Campaign '83 are dning, according to Mr William Hilton, FMB national director, is to provide the men, the money and the materials with which to satisfy

The FMB, with some 20,000 member firms, has the men. In the recent budget, it says, the the UK timber sector. Chancellor "made available a sum of money which, in effect, could apply stimulation equivalent to the gentle massage of net is providing substantial the ailing patient. With Campaign '82," it adds. "the FMB paign and has also arranged to and its partners hope to apply the equivalent of a blood trans-

Bradford and Bingley, meanwhile, is priming the pump by a building society loan would making available £200m this not make economic sense. year for home improvements

£944,000 scheme. Thirty-eight aged persons fighters and one

warden's flat will be built for

THREE ROAD contracts in the

Shronshire, for Telford Develop-

politan Borough Council.

£734,000).

and a refreshing honesty about over 40 per cent of total coning of £500m to £500m. The admitting it—was the theme struction output. By the same B and B will, however, apply date, repair and maintenance on a "slight loading" to interest housing could be more import- rates on money leat for home improvements-not a had thing So the demand, present and when building societies in general are using premium schemes to attract savings from deposi-

Magnet describes itself as a market leader in windows, doors, kitchen units, stairs and closely related products. It was described last year by London stockhrokers Savory Milla as the most successful company in

The company has close ties with the FMB, and is one of its largest member groups. Magfinance some of the lower priced home improvements which might come out of the scheme those where the cost of process

WILLIAM COCHRANE

minal, near Tamworth (vatue

been awarded a further £4.7m refurbishment contract for Shell UK (Administration Services). Stage three at Shell Centre Is

the City of Liverpool (value Worth £1.2m, 71 flats, houses and buogalows will be con-structed at Pigot Street, St Heleus for the St Helens Metroindividual private dining rooms In Manchester, through the contractor's regional office, 38 restaurants with support facili flats, two wardens' units and communal accommodation are heing huilt at Crumpsall for the

Family Housing Association THE BBC has recently awarded (Manchester) (valued at EVE CONSTRUCTION special 1724,000).

Projects division a contract valued at £2.3m for new serial support towers at Rampisham West Midlands, together worth more than film have been Transmitting Station, Dorset. The work will be carried out about 19 km west of Dorchester swarded to TARMAC REGIONAL CONSTRUCTION. Two of them and will involve the design/ are for new roads at Telford, detailing, supply and erection of detailing, supply and erection of 34 new steel towers ranging in ment Corporation and the height between 50 metres and largest (worth about \$1.4m) is for 105 metres, and the construction the construction of the 2.7 kilo- of the associated foundation metre. North District Road works. Also included is the dishetween Trench Lock and Lee mantling of 30 existing masts gomet. Another contract, worth about metres to 100 metres.

\$1,17m is for a road fast under and kilometre in lands, linking throckwarding Wood Was and St George's Road at Donnington The other road contract, worth Construction) has been awarded shout 5°,7m, is for resurfacion a £926,000 contract from BP the M6, between functions 3 and Development (UK) for a six Warwickshire County inch diameter 27 km long pipe-

hungalows. For the Venture Housing Association, 49 dwell-ings will be huilt at Liverpool's **BOVIS CONSTRUCTION have**

in the downstream huilding which has been divided into two phases. The first phase com-prises the conversion of an existng coffee lounge area into nine together with adjacent toilet facilities. The second phase is to form a new kitchen and two

CEMENTATION PIPELINES AND MECHANICAL SERVICES (a division within Trafalgar House company Cementation

roadworks and underground servicing. The Building Research Establishment has asked us to make it clear that the remarks reported on last week's building page and attributed to Dr Stephen Wozniak represented line to run from BP's rough Work has just started on terminal at Easington Humber.

of the BRE.

What's new in building

Weatherproofing and thermal insulation are the prime advantages offered with a new roofing system, called Rubertherm, which is a polystyrene sandwich, supplied in roll form, and applied on site with a specially developed cold

Maker Ruberoid says its. new system will save fime and which applies the prefelted laminate cold, thus eliminating the need for hot bitumen. The Ruberoid-Vedatex adhesive has instant grab which prevents the roofing underlayer being moved by wind while Laying, yet remains material to be aligned for about 15 minutes.

Another benefit of the new adhesive is that it forms a satisfactory bond in the damp-

A security lighting package which automatically switches on lights when prowlers or would be intruders approach promises security; as well as energy savings (lights are turned on only when they are needed). Cailed Radariux, it comes in a standard pack with a power pack/fight control unit, motion detector, lamp bracket with daylight sensor, and a bozzer.

. The basic system triggers np to 600 waits of light and can be expanded to cover as much or as little of a building or premises as required.

COMPANY NOTICES

COMPAGNIE. FINANCIERE DE PARIS ET DES PAYS BAS NOTICE TO SHAREHOLDERS AND TO HOLDERS OF THE CONVERTIBLE

of the purpose of this exchange holders of shares and 1978 convert of COMPAGNIE FINANCIERE DE PARIS ET DES PAYS BAS and to the bank or flaggical institution which

DS ISSUED IN 1976 WITH A RISING INTEREST RATE.



: A roll of Rubertherm being applied to a vapour retarder

(01-204 7277). More from Arc Dynamics

Ward Brothers has launched a profiled metal liner sheet for industrial hulldings. mewall application the Designed for both roof and sidewall system is said to provide a superior yet economical allmetal alternative to tradiplasterboard lining. Available in steel or alumi-

nium if comes in two width

modules for use with either metal or asbestos enter cladding and conventional insulation infills, more on 094 44421.

Economic, self-adhesive cloth tape for masking out cats-eyes, grids and manholes during road surfacing is introduced by Rotunda (081 336 4433).

Standard widths are 75, 100 and 150-m, in 50 meter roll lengths.

will extend the medical school incorporating bospital labora-tories at St George's Hospital in Tooting under a newly won £9.7m contract

This consists of two blocks, and the buildings are constructed with a reinforced concrete frame clad in bricks to match existing buildings. Work should finish by December 1962.

THE CO-OPERATIVE INSUR-ANCE SOCIETY is to develop a triangular area in Mayfair, just off New Bond Street, and has plefiged to retain and returbish existing buildings around the perimeter, building a new £7.5m shops and offices complex in the

The development will contain covered shopping parades over whose roofs will be an outlook from three storeys of offices. But hecause the offices have a limited height in relation to the perimeter roofs, their development, says the CIS, will be hidden from most viewpoints.

Frederick Gibberd & Partners

are the architects for the complex where new shops will occupy a net area of about 24,000 square feet and offices cover a net area of around 19,500 square feet.

MORE THAN £7m worth of new work has been secured in this first quarter by G. E. WALLIS & SONS, with a f2m scheme for Cwbran Development Corporation heading the list. This is for the construction of 108 homes the construction of 108 homes and association and the Anchor Housing Association. Valued at over £1.5m this comprises flat.

Two other housing develop- flatlets, wardens houses and

The First Canadian Bank **Bank of Montreal** Notice to Holders of FLOATING RATE DEBENTURES, SERIES 6, DUE 1991.

Be advised that Bank of Montreal has appointed Morgan Guaranty Trust Company of New Yorkat its main office at Avenue des. Arts 35, in Brussels, Belgium, as a Paying Agent for the Series 6 Debentures.

Dated at Montreal, Quebec, Canada this 9th day of April 1982.

BANK OF MONTREAL

R. MUIR Vice President and Secretary

NOTICE TO HOLDERS OF EUROPEAN DEPOSITARY RECEIPTS (EDRs) IN ASAH! GLASS CO., LTD.

NOVA SCOTIA POWER CORPORATION

91% Sinking Fund Debentures 1989 The Sank of Nova Scotia Trest Company Channel Islands Limited as Fiscal Agent announce that the antire codemption instalment of USS2;100,000 due 15th May, 1982, has been met by purchases in the market.

REPUBLIC OF COSTA RICA

Floating Rate Note issue of US\$20 million April 1978/85

The rate of interest applicable for the six-month period beginning on April 14th 1982 and set by the reference agent is 167% annually.



This announcement appears as a matter of record only

Ok Tedi Mining Limited

extending storage facilities for side to Saltend near Kingston-

Texaco at Kingsbury Oil Ter- upon-Hull.

Bank of America

Investment Banking Group

Acted as adviser to the consortium members

The Broken Hill Proprietary Co. Ltd. Standard Oil Company (Indiana) Metallgesellschaft AG. Degussa AG.

Deutsche Gesellschaft Fuer Wirtschaftliche Zusammenarbeit (Entwicklungsgesellschaft) mbH.

in developing a financing plan for Stage 1 of the Ok Tedi Gold and Copper Project being undertaken by

Ok Tedi Mining Limited

which is owned by the above consortium members

The Independent State of Papua New Guinea.

Financing to be provided through:

Export Finance and **Insurance Corporation** Kreditanstalt Fuer Wiederaufban

Export Development Corporation

Export Credits

Oesterreichische Kontrollbank AG.

Overseas Private **Investment Corporation**

Guarantee Department

With additional financing available from a syndicate of international banks.



BANKOFAMERICA

Prestest Continuic los

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COMPAGNIE PINANCIERE DE PARIS ET DES BAYS-BAS

FLOATING RATE NOTES DUE 1988

FINANCIAL TIMES PUBLISHED IN LONDON & FRANKFURT

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r, preceded by the appropriate area code valid for Birmingham, Liverpool and Manchester).

BUSINESSMAN'S DIARY

UK TRADE FAIRS AND EXHIBITIONS

~~~ 2		
Date	Title	Venue
Current	April 14)	Bingley Hall
Current	International Motorcycle Show (0203 27427) (until April 18)	NEC, Birmingham
Apr 18-19	British Pet Industry Exhibition (0233 36656)	Exhibition Ceotre, Harrogate
Apr 20-22 Apr 20-23	International Fire Security and Safety Exhibition All Electronics Show (0799 22612) —IFSSEC (01-388 7661)	Barbican Centre Olympia
	Communications Equipment and Systems Exhibi- tion—COMMUNICATIONS (021-705 6707)	NEC, Birmingham
Apr 22-24		Cumberland Hotel, W.1
Apr 23-25	6707) Computer Fair (01-643 8040)	NEC. Birmingham Earls Court
Apr 26-30	Storage Handling and Distributioo Exhibitioo-SHD (01-446 2411)	Earls Court
Apr 28-29 May 4-7	EIA Engineering Exhibitioo—ENGEX (0403 69390)	Sandown Park, Esber Olympia
May S-10	Optrafair (01-405 8101)	NEC, Birmingham
May 11-13	British Craft Trade Fair (0283 867153)	
•		

Exhibitioo Centre, Harrogate Wembley Conference Ceotre

Apr 14-23
Apr 15-24 International Electronic Packaging and Production Equipment Exhibition — INTERNEPCON (04S3 38085) Peki Apr 20-25 International Building Exhibition—FINNBUILD (01-486 1951) Hels Apr 22-25 Ioternational Carpet, Wallpapers, Wall Coverings and Furnishing Textiles Exhibition—PARITEX (01-439 3964) Parl Apr 25-29 Agricultural Iodustry Exhibition—SAUDI-AGRI- CULTURE (01-486 1951) Riya
Apr 20-25
Apr 22-25 (01-486 1951) Hels Apr 22-26 International Carpet, Wallpapers, Wall Coverings and Furnishing Textiles Exhibition—PARITEX (01-439 3964) Apr 25-29 Agricultural Iodustry Exhibition—SAUDI-AGRI-CULTURE (01-486 1951) Riya
and Furnishing Textiles Exhibition—PARITEX (01-33 3964) Parl Apr 25-29 Agricultural Iodustry Exhibition—SAUDI-AGRI- CULTURE (01-486 1951) Riya
Apr 25-29 Agricultural Iodustry Exhibition—SAUDI-AGRI- CULTURE (01-486 1951) Riya
Ams Apr 27-30 Blochemical and Instrumental Analysis Exhibition
(01-486 1951)
May 3-6 Offshore Technology Conference and Exhibition (01-486 1951)
May 6-11 KORTEX 82—Rorea International Textila
Machioery Exhibitioo (Seoul 778 0821) Seoul May 11-14 SITEV 82 International Exhibition of the Suppliers
of the Vehicle Industry (Geneva (4122) 32.98.08) Geneva

HIBITIONS

Wemme,
EXH
Sao Paulo
Peking
Helsinki
Paris
Riyadh
Amsterda
Munich Dobai
Houston
Seoul
Geneva

BUSINESS AND MANAGEMENT CONFERENCES

Apr 14-15	The Economist Economic Regulation in Practice —Enforcement procedures and their implica-
Apr 16	tions for industry (01-839 7000)
	282 2711)
Apr 19-20	The Taxtile Institute: Structure and Properties of Modern Fibres (061-834 8457)
Apr 20-22	Frost and Sullivan: Life sciences-market oppor-
Apr 21	tunities in biotechnology (01-486 8377) LCCI: Doing Business with the U.S. Government —Winning, Financing and Managing U.S. Gov- ernment Procurement Contracts (01-248 4444)
Apr 21	The Henley Centre for Forecasting: Exchange Rates
Apr 21-22	in the Eighties (01-353 9961) Crown Eagle Communications; Franchising (01-636
Apr 21-23	0617) INSIG: International Banking Seminar—Banks and
Apr 22-25	Computers (Paris 7630724) NAPF 1982 Annual Conference (01-681 2017)
Apr 26-27	International Chamber of Commerce: Financial Futures Markets (Paris 261.85.97)
Apr 25-30	Lloyd's of Loodon Press: International Maritime Seminar oo Law of Collisions (01-353 1000)
Apr 28	Arab-British Chamber of Commerce: Focus oo Saudi Arabia (01-629 1249)
Apr 29	IPS: Electrooics—the industrial buyer's guide (0990 23711)
Apr 29-30	FT Conference: Seventh Industrial Relations Conference—Will Tebbit Succeed? (01-621 1355)
May 4-6	IPM: Loodoo Personnel Management Conference (01-946 9100)
May 48	Institute of Metal Finishing: Annual conference and exhibition (021-622 7387)
Anyone wishing to	o attend any of the obove events is advised to assure that there has been no change in the details

University College, Oxford Bowater Conf. Centre, SW1 UMIST, Manchester Sheffield University

69 Canooo Street, EC4 London Press Centre Churchill Hotel, W1 Bournemouth Zurich Southampton

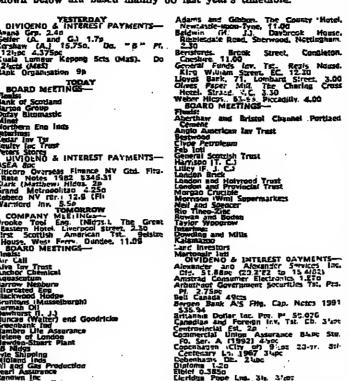
Hornton Street, W8

Peola Hotel, London London Hiltoo Royal Lancaster Hotel, W8

The Old Ship Hotel, Brighton telephone the organisers to

WEEK'S FINANCIAL DIARY

The following is a record of the principal business and financial engagements during the week. The board meetings are mainly for the purpose of considering dividends and official indications are out always available whether dividends concerned are interiors or ficals. The sub-divisions shown below are based mainly oo last year's timetable



Victory sets sail for Cup race

BRITAIN'S America Cup challenger, Victory, will be loaded aboard the Atlantic Cootaioer Lines' Atlantic causeway today in the Royal Seaforth Dock's specialised terminal at Crosby on the Mersey

The British-built 12-metere yacht is bound for New York in a challeoge for the 1983 cup which is being mouoted by the

Victory Syndicate, formed in Scotember, 1980, by Peter de Savary, international merchant haoker. The syndicate has The syndicate has promised a substantial amount towards the overall £3.5m budget.

Morgan 71. P.1 Inc. 85cts. Do. 1d/19 85cts Newcastle Upon Trate Cupc Coms. Red. 1981-83 4 and Nortros Do. 7 arc Nortro British Prost. L. 4 arc Occidental Petroleum Comp. 62.5cts Opportuna Hidga Db. 3 apc Paterson Jerks 11.5ctpt. 5.75cc Ousber Cats 45cts RSC Int. Cap. Fund Ptg. Pt. 10cts Remare: 4scPtd. 1.4sc. Dq. St.:pcPtd. 1.925cc

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COMOANY MEETINGS

F.1 Real Est. lav. Est., Sett

2.19 Pto. 52.5cts 1.258 le Fitg. Rate Notes

Victory will be towed to Newpor, Rhoda Island, where the crews will train this summer before the race.

Financial Times Tuesday April 13 1982

CONTRACTS

£12m for Balfour Beatty

BALFOUR BEATTY has won contracts worth a total of over Durrant and Murray Gro. 3.500Pf West Yorkshire Metropolitan

West Yorkshire Metropolitan
County Council has awarded a
two year contract to Balfour
Beatty Construction. Pontefruct
office, valoed at £2.14m, for the
reconstruction of Sheepsear
intersection, Leeds. The works
cover the replacement of the present gyratory traffic system by an arrangement of high capacity signal controlled intersections. Extensive areas of sections. Excensive areas of carriageway are to be constructed, largely over cleared areas of old housing with cellars. Major diversions and services are involved. The works are at the interportant of four are at the intersection of four major radial routes 1km from Leeds Clty Centre. Work has started.

The Yetholme-Wellington 330kV overhead line cootract has been awarded to the Balfour Beatty Group to Australia. The project, which will be nodertaken by Balfour Beatty Power laken by Balfour Beatty Power lake the project of the lake the Yetholme-Wellington Construction (Australia) Pvt. comprises 1-10kms of 330kV single circuit overhead transmission line on lattice steel towers with a contract value of £10m. The client for the project is the Electricity Commission of New South Wales who will also engineer the works.

BOVIS CIVIL ENGINEERING has won a contract worth £850,000 from the Property Services Agency to build climatic chambers at Founces. In addition to the main bulldings Bovia will also build access and service roads, a safety traverse wall around the test chambers and will feed in essential building services.

counter terminal equipment worth £500,000 will

be installed during 1982-83 in the West of Scotland TSB, com-pleting the front-office entoma-tion programme of every TSB branch to Scotland. A second order worth £250,000, from Tay, side and Central Scotland TSE is for a further 10 Microbank automatic teller machines doubling its original ATM origin made a few months ago.

Valued at more than 22m; (£1.1m), a contract for providings oil furnishings and ancillary coulpment at the new Queen Alvan International Airport in Animan, Jordan, has bend awarded to ERGONOM, a mann-ber of the Unilock Group. To be completed by August, the con-tract lociudes products from more than 30 British manufac-turers, as well as Ergonom's own furniture factory in Williams. and these will be shipped open land to Amman where Ergonos will be responsible for install

HINDLE COCKBURNS has he order for the first stage of a conorder for the first stage of a con-fract to be worth over \$250,000 for the supply of ball value of o Danish offsbore development. The order covers sizes from I by to 12 in valves in carbon steel stainless steel and alominion bronze and in 180 and 200 pressure classes.

RATHDOWN INDUSTRIES part of the Unitech Group of Compaoies) has a substantial contract from Brilish Telecom for the supply of linear micro phones for telephone bandset

Newport Borough Transport has ordered nine single decker versions of the Scania BR 117
DH chassis. Bodywork for these vehicles is to be provided by Wadham Stringer.

Financial Times Conferences

THE SEVENTH INDUSTRIAL RELATIONS CONFERENCE London — April 29 and 30, 1982

The Secretary of State for Employment The Rt Hon Norman Tebbit, MP, will give the keynoto address at this timely and topical coofcreoce. Other speakers will include The Rt Hoo Mrs Shirley Williams, MP, speaking on behalf of the Social Democratic Party: Mr Walter Goldsmith, Director Geogral of the Institute of Directors: Dr J S. McFarlage, Director Geogral of the Engineering Employers' Federatioo; and Mr K. Graham, OBE, Assistant Geoeral Secretary of the Trades

GOLD AND THE INTERNATIONAL MONETARY SYSTEM Montreux, Switzerland — May 11 and 12, 1982

Professor Arthur Laffer, ona of President Reagao's most influential economic advisers, will be delivering two major papers at this Mootreux meeting—one on the domestic situation to the United States to the light of the work of the Gold Commission and the other on developing U.S. policy on the international use of gold. Other distinguished speakers include: Mr Robert Guy, Director, N. M. Rothschild & Sons Limited;

Dr Chris Stals, Seoior Deputy Governor, South African Reserve Bank: Mr Meinhard Carstensen General Manager, Dresdner Bank; Dr Haos Mast. Executive Vice-President, Credit Suisse. While the primary emphasis of this major international conference will be on the monetary role of gold, the ageoda will inclode a thorough examination of the prospects of production and price and an assessment of lovestment attitudes.

All enquiries should be addressed to: The Financial Times Limited Conference Organisation Minster House, Arthur Street London ECAR 9AX

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COMPANY MEETINGS-

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U.S. \$40,000,000 Floating Rate Notes Due 1983

For the six months 13th April, 1982 to 13th October, 1982 the Notes will carry an interest rate of 153 per cent. per annum. Listed on the Luxembourg Stock Exchange. By: Morgan Guaranty Trust Company of New York, London Agent Bank

CONTRACTS AND **TENDERS**

PRE-QUALIFICATION NOTICE

JAVA-MADURA 150KV TRANSMISSION LINK

INDONESIA

SUBMARINE CABLE, OVERHEAD LINES AND SUBSTATION PLANT

in enticipetion of, and subject to, funds being silocated for the project, Perusahaan Umum Listrik Negara (PLN), the Electricity Authority of the Government of the Republic of Indonesis invitat submission of programment of the manufacturers and Contractors only who can qualify through experience and in manufacturers of plant of omitat type and rating for the dealign, manufacture, supply, testing, erection, eating to work and maintenance on a turnkey besis of any or all of the sections of work listed below. The plant is required to supply electrical energy to the island of Madure from Grasik Power Station situated Skm north of Surabaya on the island of Java.

LOT A Two 120MVA 150kV cable circuite each comprising:

— Approximately 425 maires of underground cable between an existing 150kV awitching substation at Greek and the above line.

— A submarine section to Modure island, crossing the Straits of Surabeys over a distance of some 3.5km.

— 30 motres of underground section on Madura island from the above to the 150kV overhead line terminal tower.

LOT 2 15km of double circuit 150kV (renemission lines.

Two extension beys in existing 150kV "breaker and a half" outdoor substation at Grosik.

Six for coasibly sight) beys of 150kV outdoor double busher switchgaser at Cendih substation on Madure.

Four beys of 150kV outdoor single busher switchgaser at Labeng and Sukolile substations on Madure.

20kV indoor switchgaser at Cendih.

Protection and control equipment for cables, overhood lines, translomers and owitchgaser.

One 10MVA outdoor transformer ONAN cooling 150/20kV.

LV switchgaser, battery installations 20/0/38kV suxiliery translomers, lighting and small cower cervices.

20kV cables, multicore and telephone type cables, mershalling boxes, serthing lecilities.

Substation civit works including foundations for switchgaar and transformers, cable tranches, lending and, at Cendih substation, a control building which will also house the 20kV distribution switchgaar.

LOT C Radio communication equipment to provide speach and teleprolection etc. channels from Greak to Candih, and power line carrier for the same purpose from Candih to Labang and Labane 10

Information on the project and instruction documents for firms wishing to apply for prequalification to tendor em evallable new by application to:

PRECE, CA20EW AND RIGER, Consulting Engineers
Peston House, 165/167, Preston Road, Brighton, Sussex and garagement quoting reference 25010/01.

Such applications should be mede immediately since prequalification dates received eiter 30th April 1922 may not be considered.

LEGAL NOTICES

COMPAGNIE FINANCIERE DE SUEZ

Societe Anonyme with a Capital of FF 1,421,698,500 Registered Office: 1, Rue d'Astorg, 75008 Paris NOTICE TO HOLDERS OF SHARES AND CONVERTIBLE BONDS

Under the servisions of the Law of February 11th 1992 COMPAGNIE FINANCIERE DE SUEZ will be nationalised through the transfer of the ownership of its shares to the French State.

In exchange for the shares that you are holding, you will receive floating race bonds guaranteed by the French State and issued by Caissé Nationale des 9anques CCN8), a sublicity-owned institution managed by Caisse das Dejobs est Consignations. These station rate bonds will be quoted on the Paris State Cachange from the commencement of business on April 13th 1982. The shares are valued at FP 423.09 for the surpose of this acchange.

Until April 8th 1982, the edisting shares will still be quoted on the Paris Stock Exchange ender the needing "D.T.I." professenting the French subrevitation for "Drois a Tites IndeamCaires". "Lights to nationalisation bonds").

Caless Nationale des Sanques will in due course publish a communique on the exchange procedures.

OF THE COMPANY

in addition, the 7% 1979/1995 bonds of nominal US 61,000, and the increasing interest rate 1980/1991 bonds of nominal FF 350 issued by COMPAGNIE FINANCIERE DE SUEZ are no longer convertible into shares. They can either be retained by their holders under the original terms (as to maturity and interest rate), or they may be tendered in exchange for the Calase Nationale des Sandoes floating rate bonds, shrowled that the exchange request reaches a French back or stocktroker at the latest by May 20th 1982. Their value of exchange is FF 9.562.13 for the 7% 1970 and FF 423.09 for the increasing interest rate 1390 bonds. The locreesing interest rate 1390 bonds will still be quoted on the Paris Stock Eschange with May 19th 1982 under the heating O.E.T. Georgeschting for French abbreviation for "Obligations Examestails course des Titres indemnitaires" Rends exchangeable for pationalization bonds ").

For the purpose of this exchange, holders of shares and T%, 1970 bonds and increasing interest rate 1980 bonds of COMPAGNIE FINANCIERE OF SUEZ should apply to the bank or snancial institution which usually deals with their accurities.

TO TENDER BIDS FOR THE EXPANSION OF THE BOULAOS POWER PLANT (REPUBLIC OF DJIBOUTI) 1. FINANCING

INTERNATIONAL INVITATION

Électricité de Djibouti has decided to expand the production and distribution systems for the City of Dibouti-This expansion project will include two diesel-powered geoerators designed to burn heavy fuel and capable of producing 15 MW each in cootionous operation plus the expansion of the 20-kV distribution system and the creation of a 63-kV system.

This expansion project will be financed by an international group consisting of the following: - Kuwait fund for Arab Economic Development;

Arab Fund for Economic and Social Development;

- Islamic Development Bank; - Caisse Centrale de Coopération Écocomique Française. 2. DESCRIPTION OF LOTS

Lot No. 1: Civil-engineering work Lot No. 2: Electromechanical equipment (Lot reserved exclusively to manufacturers of diesel motors or generators replying to the iovitation to tender)

Lot No. 3: Electrical equipment
Lot No. 4: 63-kV system
Lots 1, 2 and 3 are open to international competition. Lot 4 is reserved exclusively to Freech bidders supplying equipment produced in France or io the Franc Zone.

3. BIDS Interested bidders are invited to announce their intentions

in writing or by telex no later than April 20, 1982, and to indicate which lots they are interested in. Tender documents will be available at the following address as of early May 1982. Paymeot is to be made in the form of a check payable to the order of Electricité de Djibouti io the amount of SU.S 100 for Lots 1, 3 and 4 and in the amount of SU.S. 150 for Lot 2.

ELECTRICITE DE FRANCE & Direction des Affaires Extérieures et de la Coopération 68, rue du Fg-St-Honoré - 75008 Paris - France Tel. 764.66.64 - Telex EDFAE 660434 F

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ART GALLERIES

AGNEW GALLERY, 43, Old Bond, St. W1.

629 SS76. MOSCOW AND ST. PETERSBURG IN 1800—Exhition of Prints and
drawines. Undi 14 May. Mon-FrL

9.30-5.30.

BROWSE & OARBY, 19. Cork St., W1. 01234 7984. British Paintings & Drawings. BROWSE & OARBY, 19. Cork St., W1. 01-754 7984. Brittsh Paintings & Drawings. DAVID CARRITT LTD., 15. Duke Street, 5t. James's. SW1. INOIAN PAINTING 1525-1825. Until 50 April. Mon-Fri. 10-5. LEPEVRE GALLERY, OF Pruton St. W1. 01.495 1572.3 AN EXHIBITION OF FOWARD SURPA, 1875-1078. Mon. Pri. 10-5. Set. 10-1.

SANDFORO GALLERY, 1, Mercer Street, WC2. Eighteenth & Nincteenth Century Arts. Tues-Sat. 12-5,30 pm. WHITECHAPEL ART GALLERY. White-chapel high St. 377 0/07. Tube Alduste E. to 2 May FRIDA KANLO & TINA MCDOTTIANGELM KIEFFER. Sun-Fri-11-5.30, cl. Set and 9-12 April, Free. THE PARKER GALLERY, 2. Albemaria St. Piccaolily. W1. Exhibition of Old Marine Militory and Sporting aed Typograshical Orints and Paintisgs of Ships Models.

PREQUALIFICATION NOTICE FOR CIVIL WOFKS HIS MAJESTY'S GOVERNMENT OF NEPAL MARSYANGBI HYDROELECTRIC PROJECT

His Mejesty's Government of Nepel (HMG) has applied for finencing from the World Bank and Kreditanstalt für Wiedorsufbau (KFW), the proceeds of which would be used for the Marsyangdi hydroelectric project (66 MW) in Nepel. There is no commitment on the part of the Sask or KFW to finence the works until such time as the finencing is approved and becomes effective. The Marsyangdi Hydroelectric Development Soard, on behalf of the Ministry of Water Resources, Invites experienced Contractors to be proquelified as Tonderers for the civil works (Lot 1) for the Marsyangdi hydroelectric project in Nepel. Procurement for such civil works will be in accordance with the guidelines for procurement under World Sank loans and ids credits.

Selient features of mein structures and quantities of mein civil works involved are as follows:

Main Structures: Headrace Tunnel

Powerhouss (3 shells) each with

Quantities of Main Civil Works (approx.): Soil Excovation
Rock Excevation
Undarground Excevation
Concrete

Contractors wishing to be included in the list of ouslified Tandorers for Lot 1 Civil Works should apply for the Praqualification Occuments in one original and one copy to:

Marsyangdi Hydroelectric Development Board (MHDB) The Project Manager (Telex 270 natraj np) Marsyangdi Hydroelectric Project Thapathali, Kathmandu/NEPAL

Required Prequalification Documents can be obtained from above office from 15th April till 31st May. Application should be secompanied by e bank voucher of N2S 3,000 iNopelose Repose Three Thousend only), deposined to HMG a secount Rajeswa 1-1-5-6 at Nepel Restra Bank, Thapathall, Karimandu or 3 Sank Oralt of the same amount issued in levour of Marayangdi Hydroelectric Project, Thapathall, Kathmandu.

Completed Prequalification Documents shall be submitted in one original and six copies to above address of MHOS in a sealed envelope carrying outside the name and address of the applicant and marked as follows: Prequalification Documents

Marsyangdi Hydroelectric Project Civil Works (Lot 1) not larar than 14.00 hours on June 1, 1982.

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531. 9 Pm-2 am. 9 pm-2 am. 4 Duke of York Street, W1, Tel: 439 7242

width 70 m
height 26 m
getes 11 x 17 m
length 7,100 m
diamoter 6.4 m
height 35 m
dlemeter 18 m

CLASSIFIED ADVERTISEMENT

EFFECTIVE JANUARY, 1982

Sinale column Commercial and Iodustrial Property 27.50 29.00 29.00 Business, Investment Opportunities Businesses for Sale/Wanted 29.00 20.00 20.00 . 6.00 27.50 net 12.00 Contracts and Tenders

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INVITATION TO BID

REPUBLIC OF INDONESIA **COAL EXPLORATION**

DRILL RIGS, ACCESSORIES AND SPARE PARTS

The Government of Indonesia has applied for a loan from the World Bank for coal exploration, and pre-investment studies in-Indonesia. It is intended to apply part of the proceeds of such borrowing for procurement of drill rigs and spare parts. Bid documentswill be available on April 30th, 1982 upon payment of a non-refundable deposit of US\$250 or rupiah equivalent to the Directorate of Mineral Resources at the address below. The bid opening will take place on June 30th, 1982.

Prequalification procedures will not be undertaken but the Republic of Indonesia will reserve the right to reject any bid and postqualification will be undertaken.

Bids for the following equipment will only be considered from companies from member countries of the World Bank, Switzerland and Taiwan.

Tender Document:

5 (five) rotary wireline drill rigs capable of recovering H-size cores from depths up to 300 metres, including accessories, ancillaries, spare parts and tools to support a three- to four-year exploration operation involving 255 boreholes and 25,000 metres vertical drilling.

Directorate of Mineral Resources Jin. Diponegoro 57, Bandung, Indonesia Telephone 73205 Ext. 154 Cable SDM BD Telex 28337 SDM BD

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1982

Stocks Closing on traded price day 678,700 21% + 1 873,800 29% + 1 854,000 62% + 2 854,000 62% - 3% Molines , 588,200 15% + 3

Low

Nigh .

280.80 280.88 278.55 278.88 532.79 (4/7) 271.55 267.48 288.28 285.81 576.06 (4/1) TORONTO Composite 1606.8 1586.1 1581.3 1680.7 1966.5 (4/1) 1557.5 (15/5) NEW YORK ACTIVE STOCKS

Ghange day) on + 3 r+2²z

Oslo SE (1/1/72)

BOUTH AFRICA Gold (1858) Iodustrial (1953)

OINGAPORE Straits Times (1998)

118,48 112,81 150,88 (26/1)

887,45 (9/6)

411,2 (8/8) 668,3 (29/8)

39.17 (5/1)

741.72 788.89 721.85 727.24 610.76 (5/1)

451.4 487.0 (c) 592.5 635.8 (c)

Base values of all indices are 100 except Australia All Ordinary and M 500; NYSE All Comon—50; Standard and Poors—10; and Terrano—1,00 lest named based on 1975. † Excluding bonds. ‡ 400 industrials. Industrials plus 40 Utilities, 40 Financials and 20 Transports. c (industrials)

OCK MARKETS

Companies and Market				W	ORLD	STO
Artico Data Prg. 27% 2	Cournbla Gas. 51-58 Cournbla Gas. 51-58 Combined Int. 2076 Combined Int. 2076 Combined Int. 2076 Combined Int. 2076 Commissatelite. 583, Commissatelite. 580, Cons. Edison. 580, Cons. Edison. 580, Cons. Edison. 580, Cons. Freight. 570, Cont. Corp. 280, Cont. Corp. 281, Cont. Corp. 281, Cont. Corp. 281, Cont. Corp. 281, Corp. Corp. 281, Corp. Corp. 281, Corp. 281,	1878 3054 1816 3054 1816 3054 1816 3054 1816 1816 3056 1816 3656 1816 3651 3651 3651 3651 3651 3651 3651 36	April Apri	Stock MGM	576 Sohlitz Bre 192 Sohlumber 1712 Sohlumber 1712 Sohlumber 1714 South Seat Pape 1714 Signed Pa	15
April April April April April 8. April 8. April 7. April April 7. April 8.	2 1 High L 858.57 855.24 882.52 78 (4/11 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6,	0W High Low 5.47 1061.70 41.22 MA (11/1/75) (2/2/62) 4.56 447.58 12.25 100 (16:41.81 (6:7/62) 83.61 165.52 10.5 16/1) (20:44.63) (28:44.42) Year ago (approx	AUSTRALIA All Ord. (11/190) Metal & Minis. (1/1/6) Metal & Minis. (1/1/6) EELGIUM Belgian SE (51/12/6) DENMARK Copenhagen 9E (1/1 FRANCE CA3 General (25/12/ind Tendance (51/12/6) GERMANY FAZ-Aktien (51/12/6) Commerzbenk(Dec HCLLAND ANP-CBS General (13/	(a) US1,25 101,25 (b) (c) US1,27 101,25 (c) (c) 121,53 (d) (d) 115,7 115,6 (e) 1253) (e) 227,01 258,45 (e) 257,01 258,45	Apr. 6 Nigh 453.5 545.5 (471) 453.6 425.1 (5/1) 554.92 58.96 (4/1) 1072.18 1072.45 (5/4) 1272.81 126.22 (25/2) 100.20 104.6 (22/2) 115.5 124.0 (18/2) 253.02 253.45 (5/4) 723.1 (5/4) 81.4 92.4 (5/6) 72.8 (5/4)	1982 Low 455.5 (1915) 522.2 (2/4) 55.82 (3/4) 85.41 (2011) 112.86 (5/5) 88.5 (4/1) 218.85 (18/1) 866.7 (18/1) 86.2 (4/1)
Composite 116.22 115.46 116.58 114.7 Ind. div. yield % 5.75 Ind. P/E Ratio 7.81 Long Cov. Bond yield 15.54	5 116.12 115.75 122.74 107 14/41 (5	(5) (28/11/80(56/6/62) (54 149.52 4.402 (6) (28/11/89 (1/6/62)	HC NG KONG Hang Sens Benk (51/ ITALY Banes Comm Ital) II JAPAN** Dow Average (166/4 Tokyo New SE (4/1/5) NORWAY	7744 (c) 1208.85 1187.22 972) (c) 151.12 194.50	198,78 212,89 18/5). 7295,88 7978,55 (27/1)	1129.85 (9/5) 181.45 [18/1] 8898.55 (17/5) 820.79 (17/5)

Dow lower after featureless morning

هكذامن الأعهل

PRICES continued lower in featureless trading as iovestors adopted a "wait-and-see" attitude amid ecocomic and international uncertainty. The Dow Jones Industrial Average was Dome Pelroleum rose it to 0.78 lower at 842.18 on volume of 22.5m shares at midsession. Imperiol Oil class "A" C511 lo Declines led advances by six to five. The NYSE All Common CS171, and Numac Oil 1 to Index was 19 coots off at \$66.70. C\$191.

Uncertainty over the Falkland Islands dispute, projections of poor first-quarter corporate earnings and the lack of compromise between the White House sod Congress over Budget proposals

were all factors.

Most issues showed only margioal price changes and trading activity focused on those stocks in merger or other special situa-

cions.

Schlitz was the volume leader and rose i lo 5152. Strob Brewery has offered \$16 a share for 67 per ceol of Schlitz's stock, and at last Thursday, 54 per cent of the shares were tendered in response to the bid.

Also active was Haena Mining, down 514 to \$352, Norcen Energy is offering \$45 a share for 42.7 per ceot of Hanna, but the bid is stalled in court.

Saxon Industries was down i to \$35. The company expects to report a pre-tax loss for 1981 tions.

report a pre-tax loss for 1981 and is i default oo some of its debt previsions. Northrop gained \$15 at \$471. It plans to sell a plant in California, thus reducing its investment in new equipment to \$25m from \$100m. THE AMERICAN SE Market Value Index was un 2.14 at 272.90 on volume of 2.3m shares.

Canada

Sbare prices were sharply higher at mid-session, paced by a strong gaio in Oil and Gas stocks. There was spendarion that the Federal Government might join the Alberta Government in introducing tax concessions that the believe the statement in t concessions to help the treubied SS.70, and HK Leong Industries oil iodustry.

The Composite Iodex advanced The Straits Times index put The Composite Iodex advanced The Straits Ti 11.5 points at 1,617.5, The Oil on 5.42 at 741.72.

Advances led declines 163 10

Advances sed decimes 100 to 100 as seven of the 14 indices moved higher. In Golds, Carolin Mines [31] CS11 to CS91, Little Long LAC drepped 1 to CS91, and Cambell

Tokyo

7.280.82 on thin trading volume of 250m shares. The Sicck Exchange index was 1.09 higher at 533.30.

Among factors influencing sentiment were doubts over the dollar/yen exchange rate and the Felkland Islands crisis.

Majer gainers included Hilachi, up Y13 at Y557, Toyola Molor, up Y7 at Y545, Takeda Chemical, up Y13 at Y833, Matsushita Electric, up Y2 at Y959, Stasudi Shipbnilding, up Y7 at Y185, and Victor Japan, up Y30 at Y1,850.

The second merket traded slightly lower.

BELGIUM (continued)

Red Lake was off 1 at CS16.

Share prices firmed on scattered buying support. Blue Chips were mixed on lack of fresh factors in the market. The Nikkei Dow index rose 20.61 to

Singapore

Prices fioisbed higher on late buying.
Bouslead added 16 reols al S\$2.40. Growth Industrial Hold-lars 22 cents at \$\$2.80, and Malay Bank 25 cents at \$\$6.80. Helels, Properties and the second section were higher where traded, Commodities were little changed. Selanger little changed. Selangor Properiles rose 16 cents to

Jersey may change law on loan security

BY EDWARD OWEN

A NEW LAW has been pro- hypothecated (mortgaged) in posed in Jersey to solve prob- Jersey under 2 law of 1880, bot lems over the use of stocks and a security interest in movable shares, life assurance policies and similar moveable assets as colleteral for a loan-2 situa- pledge, stemming from ancient tion that has hampered banking business on the island.

The Bill is the oulcome of consultations belween the deemed. island authorities and the pra-fessional community which creation began in the mid-1970s, when independent Mr David Morgan, Jersey's former commercial relations officer, produced a series of

Mr Morgan envisaged the through owenership of shares introduction of statutory challed in the ecompany controlling the bonds accompanied by a system property will be able to usz honds accompanied by a system of registration, but, in the pre-

The island's finance commu-

nity believes the proposed law House, will allow greater flexibility in The b

AUSTRALIA

property can be created only by a complicated system of Norman law. This involves the lender physically holding the property until the loan is re-

The Bill provides for the creation of a district security tolcresl spart from hypotheca-

tion or the traditional pledge.
This will enable a bank, for example, to lend modey against onicer. produced a series of reports on company law the security of a life assurance policy or of deposits made by a third party which guarantees the debt. A company will be able to put up its portfolio of considerably more comprehensive than those embudied in the proposed law will also the main change is that Mr.

present Bill.

The main change is that Mr
Mergan's draft law covered all
moves ble property, while the
Bill is final form is coofined
to intangible assets.

The proposed law will also
clear the way for the mortgaging of flats, which in Jersey are
still of doubtful legal status as
real property.

Someone occupying a flat

these shares as collateral.

The security inferests measure posed law, the security interest
is established simply by a is due to be followed by the
written agreement and the island's first trust law, and in
possession of documents showdue course by amendments to

possession of documents showing a tille to the collateral. Other departures from the original proposals are that leases of land and hire-purebase and rental agreements are not covered. A provision has been included to establish beyond doubt the capacity of a Jersey resident to put up as collateral movable assets held outside the

movable assets held outside the fund to more from London last island under foreign law.

August to a new building in August to a new building in Godalming, chistened Panda

will allow greater flexibility in lending, and provide better Malcolm Hecks Associates of security for transactions.

The building was designed by Malcolm Hecks Associates of Ripley and built by Crowngap Land and buildings can be Developments of Farnham.

[APAN (continued)

CANADA	BELGIUM (continued)	HOLLAND	AUSTRALIA	JAPAN (continued)
Stock April April	April 9 Price + et	April 8 Price + or	April 9 Aust, 5 -	April 12 Yen -
AMCA Intl 184 195	Petrofina	ACE Molding : 79 61	ANZ Greun 3.75 +0.03	Kubota 334 4 Kumgaal 437 -1
	Royale Seige 5,480 +80 Soc. Can. Bang 9,796	Aheld	Agrow Aust. 1.69	Kyoto Geremie 3,15050
Alesa Alumin . Str. 901.	Softna	ABH	LARROR PHID PRD J 1.50)	Maeda Cons 685 +2
Algoma Stemi	Solvay	9 redere Cert 1985	Aust. Cons. Ind., 1.51 -0.01	Marubeni 294 Marudai 597 +4
Bir. Neva Scotia. 224 223, Basio Resources 3,00 2,50	UC5	Boss Kalls 64 +2.2 Behrmann-Tet 40 +0.2	Aust. Not. Inds 2.60 +0.81	Marul
Bell Canada 12 1 10	Viellie Mant 9,050 -10	Celand Hidgs 34.5 -0.2 Elsevier NDU 147.5 -1.5	Bonk NSW 8.70 +0.01	M ta Eloc Works. 310 +8
9P Canada 304 294		Euro Comm Tst 75.7	Bond Nidge 1.07	M'blahl Corp 564 —1 M'blahl Eleot 248 —0
Srinco	DENMARK	Glat. Brocarina 89.5 -0.9	81'ville Coeper 1.23 -0.04	M'bishiR East. 469 +4
CIL Inc 254 254		Heinekan 54 —1.7 Neegovana 17.4 —0.3 Nunter Deuglas 9.8 —0.1	Bridge Oll.,,,,,,,,,,, 2,55	Mitsu Co
Camflo Mines 115 1034	April 7 Price + or	int-Muller 25 +0.8 KLM 109.4 +0.0	Brunswick Oll 0.26	Mitau-koshi 375 +3
Can Cement 914 954	Andelsbanken, 125 Baltica Skand 385,4 +0,8	Naarde's 28.6	CSR0.190.88	
Can H W Lands 251g 231g Can Packers 29 90 Can Truspo	CopNendelsbank 127.2	Hed Cred Rank 05 1 -04	CastlemaineTys. 3.48 -0.84	Nippon Meat 386
Gan Imp Bank 90 291a Can Pacific 2214 2214	East Aviatic 104.4: +1	Ned Lloyd 123.E -0.5 Oce Grinten 108.2 +1.6	Do. Dots 0.50	NipponShinpan 830 +2
Can P. Ent	Forende Berygg. 814 +7 Ferenede Damp. 455.4 +1.4	Pakhoed 42,5	Coles (G.J) 2.05 +0.06	Mppon Sulsan 237 +8
Chieftain 20 19	Jyake Bank	Philips 24.7 +0.1	Crusader Oil 3.46 + D.NI	Nissan Motor 719 +5
Onna Bothet A 144 144	Nord Kabel; 140			Nermura 430 -2
Coseka Resro'es 5 8	Privotbanken 153.6	Rolineo	Endeaveur Res 0,22 +0.03 Gen Pro Trust 1,54 +0.01	Olympus
Costain 21s 51s 51s Deen Devel 3,40 3,30	Provinsbanken 113.4	Savenburg's 89,3 —0.7	Hertogen Energy 2.90 -0.04 Nooker	Pioneer 1,360 -20
Denison Mines 221s 221s Dome Mines 151s 101s	8. Barandsen 500 -3 Superfes 100	Tokyo Pac Hg 209 Unliever 155.3 +0.9	Jennings	Renown 897 -3 Ricoh 464 +4
Dome Petroleum 94 94 Dom Feundries A 51 5112		Viking Res 121 +1 Vmf Otork, 42	Jenes (D) 1.42 -0.08	Sanye Elect
0om Stores 101s 151s Domtar 184s 184s		Velket-Stevin 34 -0.3	Kie Ora Geld 0.08 -0.01 -0.01 -0.01 -0.01	8harp 670 : -5
1 PE 1001 HICKY 1 56 051a	FRANCE	West Utr Bank 97 +9	Meekatherra Ms 9.10 -0.0	2hisledo
0t-West Life 913 216	1 1 -	ITALY	Morarch Pet 0.17 -0.01 Monarch Pet 0.10 -0.02	5 tome Merine 299 -5
Gulf Ceneds 15% 127g Gulfstream Res 3.70 4.60 Hawk Sid. Can 8 0	April S Price + er	,	Not. Bank 0.45	Talsei Corp 270
	Emorunt 41% 1976 1,940 -20 Emorunt 7% 1976 6,290 -15	April 2 Price + er	Hichelas Kiwi 1.28	Takeda
Hoffinger Argus. 27 264 Nudson Bay Mns 171s 107s Nudson's Bay 221s 281s	Air Llouide 570 +5	Assicur Con 148,058 +50	North 9kn Hill 1,80 -0,02 Oakbridge 1,20 Otter Expel 0,60	Tellin
Impaco 391, 395e	Adultaine	Barca Com'le 58,200 +600 Bastogi Fin 186 +11	Otter Expel 0.60 Pancon 1.55 ~0.05 Pan Pacific 0.12	TB3 452 } -5
[Imp OllA	50 419 -7.1 Souygues 729 +6	Credito Varesino 8,590 +112	Cusen Marris C 0.08	Tokyo Elect Pwr. 823 -2 Tekyo Gas 113
Indai	BSN Gervals 1,599 +1 Carreleur 1,604 +14	First 1,755 12 Finsider 40 2	Regkitt & Coln 1,82 -0.98 Santos 4,30 +0,06	Tokyu Corp 012 +5
Mec 210eds] 20 2212	Club Meditar 581 -1 CFAO 541 -2	Invest 2,210	Sleigh (HC) 0.75 -0.05 Seuthland M'n'g. 0.25	Toshiba
Marks & 2 penceri 912 612 Massey Ferg 2,48 2.60	Gie Bancaire 197 2	Mentedison 12919 - 19	Ponryos Expel 0.16	Toyota Motor 840 . +7
Mariand Explor. 35% 05%	Clo Gen Eaux 310 -1 Cofimed 115 +0,1	Perelli Ce 2.010 +30	UMAL Cone 1.93	Victor
Mitel Corp 9814 2256 Moore Corp 0836 3856	Greuot Loire 71.5 - 0.5	Snia Viscosa 720 —7 Tore Assic 18,400 ÷ 560	Waltons 0.75	Yamaha 677 —82 Yamazeki 555 —10 Yasude Fire 237 +2
Net. See Prode A 9 9 Heranda Mines 164) 10%	DNEL 43.3 -0.8 Oumez 1,040 +9	do. Pref 13,070 +372	Woodside Petroli 0.75	Yekogewe 8dge 560
Nthn. Telecom 5434 5414 Oskwood Pet 1014 95	DenOccidental. 375.1i -2.9 Imatal 57 -1.9	NORWAY	Wermald Intl 2,00 -0.08	SINGAPORE
Oskweed Pet	LEGING 859 8' 0 2 1			April 9 Prige + or
	L'Oreai	April 7 Price + er	HONG KONG	6 ~
Power Corp 1114 1118 Quebec Stren 8.80 2,56	Matra	Barrana Baka	April 8 Price 1 - er (Boustead Shd 2.94 -0.03 Cold Storage 3.86 +0.02 DBS 7.75 -0.1
Rangar Oil 74 1 . 07e	Most-Hennesey 681 +1 Meulinex 57,4 +0,3 Perned Ricard 349,0	117.0 127.		France & Nasya 0.2
Reed Stenha A 12 11 ig	Perrier	Kesmes		How Par
ReyalTrustoo A. 141, 137k	Posisin	Storebrend 210 ;	Gross Harbour	Melay Banking 6,05 +0,15 Maley Brew 5,00 OCBC
38467377 6414 : 541a	reconte 91x			Blme Oerby 2.27 -0.02 Straits Trg 9.3 +0.2
Steel of Lan A 814 21	Roussel-Uclaf 221.25 Skis Rossignel 528 -9 Telemech Elect. 748 +B	SWEDEN	HK Telephone 28.0 -0.5	UD8 4.00
Texaco Canada 95k 25	Valeo 220 +0.5	April 8 Price + or	Jerdine Math 10.1 +0.7	SOUTH AFRICA
Thomson Hews A 22 28 Teronto Dom 8k 29 204			New World Dev 4 +0.05 D'eeas Trust 9k 5.2 +0.1	April 8 Price + or
TransCan Pipe 8134 8154 TransMintin, Oli A 818 818		Alfa I steel 218 11	SNK Props 0.5 +0.9 Swire Pac A 10.8 +0.5	Rand -
Utd. Sisco Mines 4.35 4.30 Walker (H) Res. 154 1518	1 1.		Market A Company of the law of th	Norcom 0 7.5
Westcoat Trans. 1578 1534 Weston (Goo) 054 354	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Boliden 214 -1	7	Inglo Am
	AEG-Talef 42.8 +0.5	Colluloss 830 Electrolux 8 99.0 -0.0 Ericason 005 -1	JAPAN É	Inglo Am Prep 2.7 +0.1 Sariew Rand 9.05 -0.15
	8ASF	Essette(Fred) 125	•	NA Invest
	45 1 FTG 120,8 +U,4	Fagorsta	1 (01)	
	848-Rank 995 0 . 4 6	Saab-Skania 133 +3	Amada 537 -9	rietoritein 28,50; -0,25
AUSTRIA	Brown Boyeri 209.5 -0.5	Sandvik(Free) 196 — 2 Ekandia 451	Stringstone 137 -9	iold Fields SA 62 —4.3
	Commerzbank 153.4 + 1.5	DKL R 130 18 1	Citizen	luletts 8.5
April 8 Price (+ or	226.2 +2.4 1	ven Handelson . 07.0 -0.5	DAIGH 510 -1 N	K Barrage 10.75
	Demag 141 ; +1 D'ache Baboock 1 204.5	/olvo(Free) 143 +1	Dal Nippon Ptg 051 -3 P	retea Hidgs 8,60
poserbank 190 t1 1	Deutsche Bank 286.5 +0.8	1	Dara 440 +8 R	ust Diet 4.05
Semperit	Uresoner Bank 104.8 +2.3			A Brown 4.50
Veitscher Mag: 198 ±5	Hapag Lloyd 55,8 +2.0	WITZERLAND	ujisawa	ger Oats
	Hoeseh 123.1 +0.1	April 8 Price -	u)itsu Fanuc 4,450 —10 — Freen Cross 1,890 +40 E	Inancial Rand US\$0.751
	Horton	lusuisse 055 -20	leiwa Ri East 897 4	(Discount of 20%)
1	Karatadt 190.5 +0.0	Frown BoverL 1,100; -10 N		RAZIL
REGISTRATION OF THE STREET	KADTROT 154.9	endià Culona 1775 - N	leusefood 1.030 I	April 12 Price + er
	Kloeckner 697 112 E	lektrowatt 8,290 —10 Nischer (Geol 470, +5	eya 071 46 tch (G) 282 +2 tc Ham 414 tc Yokado 880 Ac	Cruz . —
April 8 Price +or	Uffhanse : 79 Al - 6 4 N	lacher (Geol 470 +5 loff-RochePtCts 01,000 +750 leff-Roche 1/10 6,193 +50	to-Ham	cesita 1.01 -0.64
29FD 1500 -48	MAN	nterfood 5,750,	AL	Mgo Min 11.55 —0.85
ckaert 8 1.650 +10	Wetaligessell 245.5 +1.5	andia & Gyr 900 10	USCO 580 -2 Lo	Nas Amer 7.00 . —0.51 Strobras PP 8.05 —0.59
ALLIGHT COLUMN TO STATE THE	Prevsess	er-9uhrile 1,050. —10 K	ashiyams 755	11 PE 11.80 +0.30
	Chain West Elect 170.5 -0.0 S	andoz Pt Cts1	Irin	la Rie Doce 12.00,0.20
2,450 -50	101710H 229.5 11119	wister! 765 _2 v	omatau Fift. 885 3	Tumever: Cr 2,454.6m,
	/arta-new 1780 +0.5 8	Wiss Reinson 6.075 +0 K	ONISHTOIKU 588 , -2 }.	Valuma: 843,7m. Source: Ria de Jeneiro SE.
2rei6t02nk 4,550 +30 iv	erein-West 288	wise Volksbk 980 —10 nien Benk — 3.075 +10 k	NOTES Prices on this page idividual exchanges and are last	tt tracinci unices. E Deplines
dn Hidgs 5,920	- TIN TINE	11110111111 TATES	uspended, ad Ex dividend, at i Ex all.	er scup name. Xi Ex tights.

BY COLIN MILLHAM

rates riss on the back of a influence during the week was weakening pound.

Last week's overall shortage of about £1.2bn was in line with represented the unwinding of market expectations, with the help given by the authorities maint shortagle concentrated on during the tax paring season.

major shortfalls concentrated on during the tax paying season.

WEEKLY CHANGE IN WORLD INTEREST RATES

High and the second funds and

+8.89375 PARIS Intervention Rate +0.83125 Three month

MILAN

DUBLIN

Counting on the fleet

INTEREST RATES reacted predictably to the Falkland Islands crisis last week, creating an unusual problem for the London money market, and adding a new dimension to the uncertainty about future trends.

The problem is that the upward pressure on rates, coupled with the downward pressure on sterling, is strictly political. The cost of the naval nperation, which depends on so many unknown factors, has not been takeo into account; only the Government's ability to survive the next few weeks or

the opposite direction.

The with the bills on the prospect with the bills on the prospect of falling rates.

The situation is obsicusly not the prospect of falling rates.

The situation is obsicusly not where overnight expected, as was the wholesale The situation is obsicusly not price index published the sustainable where overnight

BANK OF

previous day, but the market took very little notice because of lts concern with the Falkland Islands.

Islands.

In money is drifting around trying to find a home, and dragging factor was an increase of \$222m\$ down the key seven-day interior in the note circulation before the bank rate, while fixed period.

Market liquidity has shown signs of improving, although the true position has been true position has been exaggerated by nervouscess about the political situation. This has led market operators to sell as much paper as possible to the authorities, rather than borrow money on the open market. It did not appear to be through any desire of the Bank of England that its dealing rates on band four bills rose slightly last week, but was simply a reflection of the desire to sell bills. This is in stark contrast ing the market are pointing in the opposite direction. The money supply figures released

ENGLAND	TREASURY	BILL	TENDER

	April 9	April 2		April 8	April 2
Bijls on offer Total ef	£100m	£100m	Top accepted rate of discount	18.9552%	12,47422
applications	£2 16,65 m	£442,79m	Average		
Total allocated Minimum	£100m	£100m	rate of discount	18.7821% 13.20%	12.47179 12.87%
accepts d bid	£96.795	£96.89	Amount en offer		
Allotment at minimum level	37%	918	at next tandar	£100m	£100m

÷	FT LOND	NC		LONDON	MONEY	RATES
ā	minimum level	37%	918			
	accepts d bid	£96.795	£96.89	Amount en offer	£100m	£100m
•		£100m	£100m	rate of discount Average yield	18.7821% 13.20%	12.4717% 12.87%
	Total ef applications	£2 16,65 m	£442,79m	rate of discount	18.9552%	12.4742%
	Bills on offer	£100m	£100m	Top accepted		

INTERBANK FIXING	April 198:
3 months U.S. dollars	Overnight 2 days no 7 days er.
bld 16 5/8 efter 15 5/4	7 days not One ment
6 mentha U.S. dellars	Three me 6ix menth Nine mont
bio 150/8 offer 150/4	Two years

The fixing rates (April 8) are the erithene-sbasenth, of the bid and effered rates for \$10m quoted by the market to five reference banks at 11 am such working day. The banks are National neter Bank, Senk of Tokyo, Deutsche Sank, Sonque National de Paris and Morgan Guaranty Trust.

LONDON MONEY RATES

April 8 1982	Cartificate ef deposit	Interbank :	Authority deposits		House	Company Deposits	Market Deposits	Treasury	Bank Bills o	Trada Bilis 4
Overnight		1-1212	12-124			114.12	10-181-			
2 days notice	. –	. –	12 4-1213	! - 1	_	_	. —		-	-
7 days er	_	-	_	! — i	_	_	_	⊸ !		_
7 days notica		113; 184	124.127g	· - :	_	194.1342	1117-12	-	-	
One menth		13 _{rs} ·131 ₄	131g	145e-141e	13 👍	1312	1983	13	13.13	1312
Two menths	13 և 133գ	1316-1358	-	14 4 13	1312	1314	1854	187a-12.÷	12:	135g
Three menths.			1312	: 141e-137e :	13%	1318	123	1978-12:2	12	135g
6ix menths	1354 136	135g-137g	1313	1358-1314			-		127g. 131g	133g
Nine months		1374 1376	_	· 14-1378	137g	. –				-
Ine year	13; 135g	13-e-137e	235g	14 lg-13 34	13 ia	. –	-	1		
Two years			1378	·		· -		_	_	
										_

AMSTERDAM

Local authorities and finance houses seven days' natice, others seven days fixed. Long-term local authority mortgage rates nominally three years 18 per cent; four years 14½ por cent; 3½ years 14½ por cant. •• QBank bill rates in table are buying rates for prime paper. Buying rates for four-month bank bills 13½-13½ per cent; leur months trade bills 13½ per cent.

Appreximate selling rates for one menth Treasury bills 12½ per cent; two months 12½-12½ per cent; three months 12½-12½ per cent; two months 12½-12½ per cent; two months 12½-12½ per cent and three months 12½-12½ per cent one month trade bills 13½ per cent; two month 13½ per cent; three months 13½ per cent. Finance Houses 8ess Rates (published by the Finance Houses Association) 14½ per cent from April 1, 1982, Clearing Bank Deposit Rates (er sums at seven days' notice 10-10½ per cent.

Treasury Sills: Average lander rates of discount 12.7321 per cent.

Certificates of Tay Deposit (Series S) 13½ per cent from March 8, Deposits withdrawn fer cesh 11 per cent.

EURO-CURRENCY INTEREST RATES (Market closing Rates)

April 8 Sterling	U.S. Canadian	Butch Swiss	French Italian	Geiglan Franc	Danish
	Bollar Bollar	Guilder Franc D-merk	Franc Lira	Conv. Fin. Yen	Krone
Shert term 1118-1218 7 day's notice 1236-1856 Month 154-135 Three months 1354-1578 Six months 1354-1578 Dne Year 1354-1576	14 78 15 18 14 15 15 15 14 14 15 15 16 15 2 16 16 38 15 12 15 12 16 14 16 58 15 15 16 18 16 16 16 16 16 16 16 16 16 16 16 16 16	812-958 234-314 976-976 84-818 24-3 94-956 876-876 44-438 976-97 84-858 518-514 918-914 84-858 576-576 918-914 958-814 576-676 918-918	18-24 18-21 94-99 23-29 95-27 26-29 23-25 25-12-27 28-35-12 24-26-14 19-12-90-12 24-18-25-14	11.1514 12.1212 614.612 14.90 13.14 3.4.6.6 1711914 1459.1479 324-6.6 18.1914 141.15 614.812 173-1818 1415-1518 614-6.3 1318.1714 1478.1518 634-6.3	1976-814 19-2012 18-1912 17-1812

ECU linked deposits: one month 154-154 per cent; three months 143-154 per cent; aix months 143-144 per cent one year 134-154 per cent.

Asien 5 (closing rates in Singapore): one month 153-154 per cent; three menths 153-153 per cent; aix months 154-154 per cent; one year 154-155 per cent; three menths 153-154 per cent; aix months 154-154 per cent; one year 154-155 per cent; three years 154-155 per cent; aix months 154-154 per cent; one year 154-155 per cent; aix months 154-154 per cent; one year 154-155 per cent; aix months 154-154 per cent; aix months 154-154 per cent; aix months 154-155 per cent; aix months 154-154 per cent; aix months 154-154 per cent; aix months 154-155 per cent; aix months 154-154 per cent; aix months 154-155 per cent; aix months 154-154 p

CURRENCIES AND GOLD

Sterling nervous

Sterling fell to a 41-year low changed, while the rise in Euro-ageinst the dollar last Tuesday, dollar rates coupled with the and then fluctuated nervously as decline of sterling in the spot the foreign exchange market market, widened the dollar's district to decide whether a peaceful settlement or a naval battle
was the most likely outcome of
the Falklands dispute.

decline of stering in the spot
market, widened the dollar's discount.

Sterling lost ground to most
other major currencies, falling to
DM 4.26 from DM 4.29 against

The pound fell to its lowest closing level since the end of September 1977, at \$1,7495 on Tuesday, and finished the week at \$1.7580 a fall of 2.80 ceots from the previous Friday. Support from the Bank of

England was substantial, but succeeded in pushing up sterling's trade-weighted index up to 90.0 on Thursday night, which appears to be the middle of the present target range. 11 ended the previous week at 91.0, and fell to a five month low of 59.4

on Tuesday.
The pound performed reasonably well in forward trading, with the longer periods weakening but three-month finishing little changed against the dollar. the other hand one-month Europeak of \$358, and finished at sterling coded the week little \$354, a rise of \$264 on the week.

GOLD

the D-merk; to FFr 11.0725 from FFr 11.1650 against the French franc; and to Y437 from Y441.50 in terms of the Japanese yen; but rising to SwFr 3.50 from SwFr 3.47 against the Swiss franc.

The dollar was firm ahead of the long Easter week-end. It inuched a record FFr 6.3150 agelns1 the Freoch franc on Thursday, and finished et FFr 6.30, compared with FFr 6.25 the previous Friday. The U.S. currency rose to DM 2.4225 from DM 2.40; to SwFr 1.99 from SwFr 1.9425; and 16 Y248.60 from Y247.

Gold reacted to increasing world tension, particularly between Britain and Argentina heloed by an upward trend in but also with the USSR and some Eurosterling interest rates. On of its neighbours. It touched a

THE DOLLAR SPOT AND FORWARD

April 8	Day's spread	Close	One month	p.s.	Three months	7. p.a.
ÜK†	1.7490-1.7610	1.7575-1.7585	0.37-0.47c dis	-2.87	0,90-1,00dis	-2.16
relandt	1,4250-1.4310	1.4250-1.4270	0.58-0.48c pm	8,45	1.60-1.45 pm	
Canada	1,2320-1,2340	1.2330-1.2335	0.03-0.06c dis		0.21-0.24dis	-0.73
Nethind.	2.6770-2.6855	2.6820-2.6850	1.72-1.62c pm	7.48	4.89-4.79 pm	7.22
Belgium	45,69-45.80	45,70-45,72	7-15c dis		27-37 dis	-2.79
Oanmark	8.2075-8.2700	8.2550-8.2650	2-4ore dis	-4.36	4-7 dis	2,66
W. Ger.	2.4170-2.4235	2,4220-2,4230	1.30-1.25 of pm	6.31	3.85-3.80 pm	9.31
Portugo!	71.50-73.00	72.00-72.50	70-1700 dis			~17.99
Spain	107.05-107.25	107.10-107.15	30-40c dis	-3.92	80-100 dis	-3.35
Itely	1329-1331	1330-1331	10-13tire des		30-33 dis	-9.48
Norway	6,1050-6,1400	6.1100-B.1200	2-4ore dis			-1.96
France	6,2950-6,3150	6,2975-6,3025	5-6c dis		13-15 dia	-9.19
Sweden	6.9400-5.9650	5.9450-5.9550	1.25-1.10ore pm		3.25-3.10 pm	
Japan	247.50-248.75	248.55-248.65	1.90-1.30y pm		5.53-5.43 pm	
Austria	16.38-17.003	16.981-16.991	10.60-9.40gra pri		29-26 pm	6.47
Switz.	1.9700-1.9910	1.9895-1.9905	1.83-1.75c pm		6.13-5.05 pm	10.23

t UK and Ireland are quoted in U.S. currency. Forward premiuras and discounts apply to the U.S. doller and not to the Individual currency.

THE POUND SPOT AND FORWARD

April 8	Day'e spread	Close	Ine month	% p.a.	Three months	p.s.			
U.S.	1.7490-1.7610	1.7576-1.7585	0.37-0.47c dis	-2.87	0.90-1.00dla	-2:16			
Canada	2.1550-2.1700	2.1670-2.1680	0.65-0.65c dis	-3.32	1.55-1.65dis	-2.95			
Nethind.	4.68-4.73	4.713-4.723	24-14c pm		614-634 pm	5.08			
8elgium	79.90-80.70	80.30-80.40	25-40c die		95-105 dis	-4.73			
Oenmark	14.35-14.56	14.53-14.55	74-84 ore dis		181-20 dis	-5.30			
Ireland	1.2230-1.2360	1.2325-1.2335	0.69-0.91p die		1.93-2.10dis				
W. Ger.	4.23-4.27	4.252-4.263	112-1pf pm	3.52	41-41 pm	4.11			
Portugal	126.50-128.50	126.50-127.50	145-370c dis		365-900dis	-18.92			
Spein	187.50-188.25	188.00-188.20	70-95c dis	-6.26	195-240 dis	-4.63			
Italy	2325-2341	2339-2341	23-27tire dis			-11.71			
Norway	10.68110.7812	10.71-10.78	674-81core dis	-9.49	9%-10% dis	-3.71			
France	11.03-11.10	11.064-11.074	1012-1212c dis	-12.46	29-32 dis	11.02			
Sweden	10.39-10.49	10.47 10.48	74-Teore pm	0.57	2-1's pm	0.62			
Japan	432-439	4364-4374	2.35-2.10y pm	3.11	7.40-7.10 pm	3.64			
Austria	29.70-29.80	29.85-29.90	121, 9gro pm	4.32	37-30 pm	4.48			
Swilt.	3,45-3.51	3.43 -3.50 2	24-21 c pm	8.14	7-64 pm	8.00			
	Selgian late is for convertible trancs. Financial tranc 89.15-89.25. Six-month Igreard dollar 1.60-1,70c dia, 12-month 2.65-2.85č die.								

FORWARD RATES AGAINST STERLING Spot 1.7580 4.28 11.0725 3.50 3.437 12 mont 1.7855 4.0855 11.7142 3.2573 470.0 9 month 1.7743 4.1679 11.6571 3.3656 422.3 3 mont) 1.7675 8.2163 11.3775 3.4300 429.7 7 month 1.7622 4.2475 11.1876 3.8763 434.8

Ar	erii 7	3
(Ine ounce) 1,201141 (\$36214-35314 14-19934) (\$35712-35814 9691 (\$356.76	(£200-2001g) (£203 ³ 4 204 ¹ 4) (£202,386) (£200,851)	1
53, 205 (a), \$866 (a, 367)4 3a, 109 (a), \$189-190 54 (a), \$96 (a, 97)4 12 (a), \$39 (4, 40)4 14, \$206 (a), \$365 (a, 367	16207 ¹ 4-209 ¹ 4 (£107 ¹ 1-107 ³ 4 (£54 ¹ 4-55 ¹ 4) (£22 ¹ 4-82 ³ 4) (£22 ¹ 7-209 ¹ 4)	900

OTHER CURRENCIES								
April B	£	8		£ Nots Rates				
Argentina Peso Australia Dollar 9 razil Cruzeiro Finland Markka Grock Trachma Hong Kong Dollar Iran Rial Kuwait Jinari KDi Luxembourg Fr Malaysia Dollar New Zealand Jir. Saudi Arab. Riyai Singapore Dollar Sth. African Rand U.A.E. Dirham	1.3775 1.3795 263.55.24.55 9,141.8.159 10.232-10.251 145.40* 0.490.505 80.30.80.40 4,1250.4,1350 9,3035.2,3075 3,00.8,06	0,9535.0,9560 149,87:150,69 4,6370.4,6420 63,20-53,40 5,2250-5,8325 22,50° 0,2871.0,2873 45,70-45,79 2,3470-2,3500 1,3105-1,3188 3,4300-5,4310 2,1410-2,1440 2,1410-2,1440	Belgium Ilenmark France Gern, nry Italy Japan Netherlands Norway Portugal Spain Sweden	29.75-30,13 88.40-89,40 14,38-14.52 11,00-11,15 4,23-4,28 8890-2340 434-439 4,39-4,74 10.69-10.79 12519-13419 1815-19319 10,40-10,50 3,4419-3,4919 1,412,71,7319				

t Now one rate. * Selling rate.

	central central	Currency amounts against ECU April 8	% changs from central rate	% change adjusted for divergence	Divergence
Salgien Franc	44,6963	45.1993	+1.13	+1.13	±1.5440
Ooniah Krene	8.18382	8.16366	-0.25	-0.25	± 1.5428
German 0-Mark	2.41816	2.39273	-1.05	-1.05	± 1.1097
French Franc	3.19564	6.23523	+0.64	+0.64	±1.3743
Dutch Guildar	2.67296	2_65118	-0.82	-0.82	±1.5069
Isiah Punt	0.686799	0.692047	+0.76	+0.75	±1.6689
Itahan Lira	1305.13	1315.28	+0.78	+0.78	± 4.1242

CURRENCY MOVEMENTS CURRENCY RATES

April 9	Index	Guaranty Changes%	April 9	Bank rate %	Special Drawing Rights	Europe Curren Unit
Starting	90.0 116.7	-83.6 +8.6	Sterling	 -		4 0.3331
Canadian dollar	99.1	-19.1	U.S. S	12	1.10907	0.9988
Austrian schilling.	116.7	+26,3 -2.0	Ganadian 3			1.2191
Belgian franc Danish kroner	88.8	13.9	Austria Scha Belgian Fass		i =	19,797 46,199
Deutsche mark	123.1	+46.7	Danish Kr	11	_	8.1636
Swiss franc	149.8 114.1	+100.3	i) mark Guilder	71 ₂	-	2,3987
French franc	78,6	_15.2	French Fr	912		8,2352
Lire	54,2	5B.1	Lira		1474.79	1318.2
Yan	133,9	+27.8	Yen Norwgn. Kr.		275,271	245,25 3.0498
Based on trade we			Spanish Pts.		_	105.91
Washington agreed	ent Decur	nber, 1971.	3wedish Kr.	10		5.8891
Bank of England in 1975—100).	bag (pai	ie snauste	Swiss Fr Greek Dr'ch.			1.9566
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Pound Sterling	n.569	1.768	4,250	437.0	11,073	3,500	4,783	8540.	2,168	80,35
U.2. Dollar		1.	9,425	248.6	6,298	1,991	9,585	1331.	1,233	45,71
Beuts hamerk	0,235	0.413	9,748	102,6	2.598	0,822	1,109	549.3	0,509	18,86
Japanese Yen 1,000	2,868	4.023		1000,	85,34	8,009	10,81	5355.	4,960	183,9
French Franc 10	0.903	1.588	3,847	394.7	10.	3,161	4,265	2113.	1,958	78,57
Swiss Franc	582,0	0.602	1,217	124.9	3.164	1,	1,349	668.3	0,619	22,9 6
Butch Guilder	0.212	0.372	0.902	92,54	2,346	0.741	1.	495,6	0,4 59	17.01
Haliah Lira 1,000	0.427	0.751	1,821	186,9	4,732	1.496	2,018	1000.	0,923	54,84
Canadian Dollar	0,461	0,811	1,965	801.3	5,108	1.615	2,179	1080.	2,698	37,07
Belgian Franc 100	1,245	9,188	3,302	543.9	13,78	4.356	5,877	2912.		100.

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Feb. Sept. Assoc. Tooling.
Gct. Apr. Astra Inti7. 10p
May Nov. Aurora Hels.
Apr. Oct. Austin (James).
Nov. Aurora Hels.
Apr. Oct. Austin (James).
Nov. May Babcock Inti.
Bailey (C. H.).
Feb., Ang. Bailey Perk. 50p.
May Nov. Barne Cons. 20p.
Nov. May Barton Grp.
May Dec. Beabriord 10p.
Feb. Cel. Bevan (D.F.) 5p
Mar. Sept. Birmid Qualicast
Jon. Sept. Birmid Qualicast
Jon. Sept. Birmid Pailet 10p
M. J. S. O. Bad & British 10p.
Jan. Oct. Branthwarte El.
Jan. Jon. Branthwarte El.
Jan. Jan. Brown (John).
May Cort. Branthwarte El.
Jan. July Brooke Tool
May Sept. Brown (John).
Sept. May Brown & Transe
Apr. Sept. Brown (John).
Sept. May Brown & Transe
Apr. Sept. Brown (John).
Sept. May Dec. Butterfield Hey.
Mar. July Brooke Tool
May Dec. Butterfield Hey.
Mar. July Camford Eng.
Jan. June Capper-Nevil 10p.
Feb. Jon. (Camberins & HR.
Feb. John Carthyring Sp.
Feb. Oct. Chrysty Bros.
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May Carriers Sp. 50p.
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Let. May DRAPERY AND STORES | Section | Disc 21 | 122 | 123 | 124 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 125 | 12

Apr. Nov. Prestwich Parter
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Jaly Hov. R roomes Sim. 21
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Sept. Racchiffs (G.B.).
Sept. Racchiffs (G.B.).
Sept. Oct. R dmn H nan 10p
Aug. Feb. Records £1....
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Jan. Junk Richards (Leics.).
Mar. Secure Engly 10p
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Jan. June Secure Co.
June Secure Ling...
Aug. Simon Engly ...
Aug. Jan. 600 Group...
Aug. Jan. 600 Group...
June June Spear & Jackson.
July Spear & Jackson.
July Spear Record (R. 20p.
Jan. July Spear & Jackson.
July Jan. Spearer Gears 5p
Nov. June Spears Sarco...
July Jan. Staweley Inds. £1.
Joh. May Stone-Platt...
Jan. Apr. Souther & Prit £1.
Oct. May Stone-Platt...
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July Jan. Life Wadkin 50p.
July How. Wadkin 50p.
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July Wadkin 50p.
July How. Wasker (C.& W.)
July Weilman Engly.
June Vickers £1...
Sept. Weilman Engly.
June July Weilman Engly.
June Wadkin 50p.
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Sept. Mitchell Son. 10n.
Sept. Rhitchell Son. 20p
Nor. Medians.
Jan. Mors. Eng'q.
Oct. Neepsend.
Nov. Neigl (Jas) Hitps.
Nov. Newman Tonks.
July H. E. I.
Feb. Morton (W. E.) So.
Oct. Handrid Febry St.
Aug. Pegter-Hart reley
June Porter Charl

FOOD, GROCERIES, ETC.

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ENGINEERING MACHINE TOOLS

Proc 6 86 CW 65 86 ENGINEERING—Continued | Price | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Fris | Pic | List | Boy | Cw | Pic | Pi HOTELS AND CATERERS

FOOD, GROCERIES Cont.

INDUSTRIALS (Miscel.)

| Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Section | Sect

hours away.

All the facts are in our colour brochure. For your copy, con(act Wayne S. Morgan, County Industrial Officer, Clwyd County Council, Shire Hall, Mold. Clwyd. North Wales, Tel: Mold (0352) 2121. Telex: 61454.

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10 a () 10	Financial Times Tuesday Apr.l 13 1982		. 27
Tom the time to th	Pold Stock Price of Not O'er Gri PRE Districted Stock Price of Not Cw Gris PRE Districted Stock	ROPERTY—Continued INVESTMENT TRUSTS-Cont. State Price st Net Cre St's Price State Price State Sta	OIL AND GAS—Continued Japan's leader in intermetional sectiones and investment backing
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FINANCIAL TIMES

Tuesday April 13 1982



Syrian pipeline closure a serious blow to Iraq

Saudis may reduce oil output

another 500,000 harrels a day cut in its oil output in order to check the downward pressure on world prices, the authorita-tive Middle East Economic Survey consermed yesterday.

The Cyprus-based publication. which has excellent contacts with senior Saudi oil officials. said no final decision had been taken. However, it claimed that Saudi production tast mooth had averaged well below 7m b/d, the output ceiling fi had set itself following the Vienna meeting of the Organisation of Petroleum Exporting Countries last month.

The Saudi decision may be complicated by Syria's announcement oo Sunday that it had closed Iraqs pipeline to the Mediterranean. The Syrian move will put further heavy pressure on an already stretched Iraqi ecooomy and makes it even more tikely that Iraq will be seeking further substantial loans from Saudi Arabia and the other Arab Gulf oil producers during the course of the year.

Iraql officials said last mooth that its exports through the terminals in Syria, Lebanon and Turkey were running at about 900,000 b/d. Of this about 350,000-400,000 b/d were 350,000-400,000 b/d were loans totalling about \$22bn Opec." President Shagari is said pumped to Bananiaa in Syria from Saudi Arabia, Kuwait, to have warned that the

Compromise

U.S. budget

By Reginald Dale, U.S. Editor, in Washington

MR ROBERT DOLE, Republican

chairman of the Senate Finance Gommittee, said yesterday be boped President Ronald Reagan

would this week indicate

wbether he could accept a broad

compromise on bis cootroversial

1983 budget proposals.

Mr Dole has been a key figure

in secret budget negotiations between the White House and

Congressional leaders. He sald

he boped for a similar sign from

Mr Tip O'Neill, the Democratic Speaker of the House of Repre-

sentatives. The emerging com-

promise would "go nowbere"

men, he said.

consideration.

unless it was endorsed by both

ing the deal had Improved

Dole said. The compromise would involve "billions of

dollars in new taxes." he added.
Mr Dole said he could accept
a 4 per cent income surtax on

higher income groups, a pro-

posal said to have been dis-

cussed in the recent negotia-tions, but be stressed it was

only one of many ideas under

One of the major points of contention in the talks has been

whether to reduce automatic

cost of living increases in Federal benefit programmes,

and if so, to what extent. Mr

O'Neiti has taken a firm stand

against such cutbacks unless Mr Reagan accepts changes in

his tax-cutting programme, on which Mr Reagan has been

A downturn with a difference,

Page 14

equally intransigent.

hope on

SAUDI ARABLA is considering and via the sour line to Tripoli United Arab Emirates and industrialised flations could another 500,000 harrels a day in Lebanon. Qatar. The military setback it "recolonise" the developing Stria drew off up to 200,000 b/d from the pipeline for its own refineries and domestic consumption. But last month it

reached agreement with Iran, which it supports in the Gulf war with Iraq, for the supply of about 160,000 h/d. Iran was the one member of Opec to state openly after the Vienna meeting that it would not help in the defence of the \$34 a barrel reference price

for Saudi light crude or accept a production ceiling.

It is tertain that Iran will now be supplying Syria at a substantial discount with some sources suggesting that the price could he as low as \$25 a

Tehran is thus further undercutting Opec's attempts to mainwinning Syrian agreement to close the Baniaa pipeline dealing a serious financial blow to its

military opponent Iraq's ports have been closed since the start of the Gulf war in September 1980. With only the pipelioe to Turkey oow in commission, its oil revenues for 1982 are unlikely to be above \$7bn, compared with earlier

BY ARTHUR SMITH, MIDLAND CORRESPONDENT

age of industrial relations ham.

reforms has run into new

trouble. Shop stewards from

the company's two biggest

unions—the transport workers

and engineers—have foiled to support the proposed agreement for setting up a new collective

Union activists objected to the

compayn's disapproval of closed

sbops and agreement to use only outside contractors who employ

nnion labour. BL refused to

write these commitments into

would contravene the forth-

stewards also centres on con-

cern that the agreement will

confirm the union's weak posi-

"There is a fear that the

proposed new procedure is

designed to seal restrictiona

placed on trade union activities throughout BL," a union official

BL Gars had placed great

bopes on the proposed new

bargaining structure, under negotiation with the unions for

the paat three months. It is

seen as a break from the

confrontation style of manage-

ment successfully employed by Sir Michael Edwards, the BL

chairman, who retires at the

A move by the executive of

the engineering union last week

to recommend acceptance was

bargaining structure.

The chances of their accept- the agreement because they

Commons.

Opposition

said las? night.

end of the year.

greatly in the past week and coming Employment Bill now were now "about 50-50," Mr in its Committee Stage in the

BL CARS' much-beralded pack- stewards meeting in Birming-

recently received during a major Iranian offensive will have sharply increased its already heavy arms purchasing

requirements. meanwhile, the Saudi news agency announced that the Opec committee, which had been formed in Vianna to monitor the operation of production ceilings by member states, had decided postpone a meeting planned for later this month.

The reason for this was given as the decision by international oil companies to stop exerting presaure on Nigeria to lower its prices. The Saudi agency said the oil companies "had changed their mind about exerting pressure on Nigeria" to break the Vienna agreement. Opec has threatened to black-list companies which reduced Nigerian

liftings. Nigeria had earlier accused Western oil companies of using "blæckmail" against ber as part of a general bid to "destroy" Opec, according to reports from Opec's official news agency.

The reports say Nigarian President Shehu Shagari said last week that the oil companies' "blackmail" was part of a forecasts of up to \$9bn.

Last year. Iraq arranged for trialised countries to destroy loans totalling about \$22bn Opec." President Shagari is said

Shop stewards reject BL

collective bargaining plan

Senior stewards of the Trans-

Port Union expressed reserva-

tions about the package, but adopted a similar stance. Trans-port Union stewards throughout BL Cars will be issued with copies of the proposals and asked for their views in writing.

Mr Grenville Hawley, national

automotive secretary of the Transport and General Workers'

Union, refused last night to be

drawn on whether he was bope-ful of signing an agreement

He said shop stewards, be-

Teh divided and confused res-

ponse of the shop stewards to

BL's proposals must cast doubt

on the authority of any reforms.

Some officials fear the company

may agaio be forced to impose the deal because of the inability

of the shop stewards to offer a

has focused on whether or not shop floor opposition would be

forthcoming in the current environment of high unemploy-

metn rather than the merits of

use of contractors. The com-pany, in line with the Tebbit Bill refused union demands to

write in a clause that contrac-

torse abould use union-only

One controversial issue is the

Debate among tha stewards

cause of the past policy of con-frontation, were "highly sus-

two sides meet oo April 23.

attitudes and itentions."

among shop picious of the management's

the proposals.

with the management when the again.

countries through exploitation—if -they allowed to succeed

President Shagari's claims oil sales have dropped dramati-cally—and with them the country's foreign exchange earn-

Crude sales have plummeted because Nigeria's customers — oil companies, independent tradera and government buyers
—have refused to buy at the
Opec-fixed price of \$35.50 a
barrel when comparable North
Sea oil is aelling at \$31 a barrel.
Oil company officials said laat
week there was no sign of

week there was no sign of a recovery in Nigeria's production which fell to around 600,000 b/d at the end of March following the Vienna meeting of Opec. President Shagari's comments about a "hattle royal between industrialised exploiters," how-industrialised exploiters," haw-

ever, would indicate that Nigeria is finding it increasingly difficult to resist the pressure to lower her crude, prices. And Nigeria's ability to maintain official prices is crucial to the success of last mooth's Opec agreement wheo members agreed to reduce their collective output ceiling by 2m harrels a day but to keep prices

There are fears, particularly at the Longbridge plaot, Birmingham, that the company

will turn increasingly to con-

tract labour to cut costs. Though

the draft proposals remain sileot on the Issue, the unions made it clear they would con-

tinue checking union cards of

contract labour regardless of legislation.

One union official commeoted:

'This was supposed to be a

charter for peace. The prob-lems have been papered over but they will inevitably crupt

BL cars in the five main Conti-nental markets—Italy, France,

West Germany, Holland, and

Belgium - io March reached more than double the level of

The 8.896 total — compared with 4,460 last year—was beloed by the first full sales month for the Triumph Acclaim, over 1,200 of which were sold.

The new economy version of the Metro, the City, also belped lift sales, particularly in Italy where the 2,629 Metros pur-

chased set a record for any

Continental market since the car's launch there a year ago.

BL looks set for a further

improvement in its Continental

penetration from the low point

of 82,500 sates for a full year reached in 1980. But even if a

monthly rate of 9,000 cars were

to be sustained for the reat of the year, it would still be far off the peak 187,000 units achieved in 1968.

the previous year.

John Griffiths adds: Sales of

steel and shipbuilding regions By Anthony Moreton, Regional THE EUROPEAN Commis-

EEC to aid

sinn is about to announce a package of aid for steel and shipbuilding areas in Britain as part of a programme for all member countries with these Industries.

A \$30m scheme, spread over five years, ia being allocated to Britain under the regional development fund. Some £18m of this will go to steel areas the rest to those parts with heavy concentrations of shipbuilding.
The money will be pr

marily available for the improvement of run-down com-munities. Plans for rejuvenatforwarded to the Government, which will then transmit the applications to Brussels.

In addition, funds will be available for promoting new ideas in manufacturing and service industries, for estab-lishing consultancy firms and community services, and to allow smalt manufacturing units improved access to risk capital.

The first of these schemes, aimed at run-down areas, will be funded tolativ by the UK and the EEC. The remainder will be the EEC sole respon-

The steel areas qualifying will be Strathchyde. Cleveland, Corby and Wales. This excindes both Scunthorpe and Consett. When the scheme was drawn up two years ago, it was thought that both were consult packets of declining. small pockets of declining steel production in otherwise prosperous areas.

Economic changes since then bave depressed the two areas, and may well be in-cluded when the scheme bas got under way and reviews are being considered.

The commission regards the scheme as an experiment. Although it has been given a five-year life, the project will probably be evaluated at the end of next year or early in 1984. If it proves a success, the British Government might consider extending its

It had been hoped to make an announcement about the seel part of the scheme before Easter, but this proved impractical for administrative The shlpbnilding reasons. part, which could he of cotsiderable help to places like Belfast, Tyneside and Clyde-side, should be announced within a month or two.

The EEC initiative is considered interesting in Britain because it is directed at small concerns employing fewer than 250 people and fills a gap that is not met by UK

Weather

UK TODAY

DRY WITH bright periods. Occasional rain in some areas. Generally cold.

London, Central, E. and S. England, Midlands, S. Wales Mainly dry, sunny intervals. Max. 8C to 12C (46F to 54F). Central and N.E. Scotland

Cloudy, rain at first, sunny intervals developing. Max 8C to 10C (46F to 50F). N. Wales, N.W. England, N. Ireland, rest of Scotland

Mainly dry, bright periods, hecoming cloudy. Max. 9G to 11G (48F to 52F). Ontlook : Mainly dry. Rail in the North. Night frost.

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THE LEX COLUMN A slow boat

to Suez

Anyone looking through 25ear-old copies of the Financial Times in search of the City's response to the British Govern-ment's tast major military adventure is bound to be struck hy an extremely familiar com-mercial landscape. U.S. interest rates were rising—the Treasury bill rate nudged above 3 per cent in October 1956 for the first tima since the war, with Mr C. Canby Balderston of the Federal Reaerve warning credit expansion.

At home, the railway unions were asking for 10 per cent wage increases (they got 3 per cent, a few months later). A fierce credit squeeze—bank rate had been at 5½ per cent sinca February—was beginning to bite. Car sales were slumping; Dunlop had just cut its divi-dend. There were redundancies at T.I. Cycles. The Rank Organisation, as ever, was closing down cinemas.

Defence cuts

The international picture was most disagraeable. Apart from the smouldering problem of the Suez Ganal, Hungary had just been invaded by the Soviet Union and there was trouble in Poland surrounding Gomulka referred to in learned FT article as a "rehabilltated Titoist" (Mr Nagy in

Budapest, was a Titotst tont court). This did not stop the British Gorerament from cutting defence expenditure-by f9m in a package of cuts announced by the Chancellor, Mr Macmillan, on October 26. The stock market was subdued

by the cost of money and the profits squeeze. Both the gilt-edged and equity indices were some 7 per cent down over the 12 months up to the ultimatum
—the FT 30-Share Index stood at 177.7 on that day. In the week between the Anglo-French ultimatum over Suez on October 30 and the invasion the market eased further. But investors were chiefly absorbed says that ICl always raises on October 31 by a contro-wersial repayment of pre-to 161.5, and gilts had fallen ference capital by Harrods by two points or more. (Buenos Aires), and although there was pressure the follow carried news of the agreed ing day, when the dollar withdrawal in accordance with of 8 per cent, the newspaper described equity trading in terms of a "downward drift."



when the troops did go in the markels were " remarkably calm "-Gas 3 per cent 90-95s

were rock-solid at £67 i.

The disquiet in the City gathered pace in the days that followed as the political storm blew up—a storm about which the FT maintained an airmst saintly reticence. The 30-Share Index begao to drop decisevely late in the second week of November. Having fallen 3 points on the 8th A eased further on the revelation that the Egyptian expedition" would cosl £35m to £45m, not enough in the Treasury a view to upset the disinflationary balance of the April hudget."

Share prices slumped again on November 13th, as oll sup-plies began to dry up and horror atories percolated through from the heartland of industry. On the 14th, they were back to levels not seen since the 1954 bear market, and a new two-year index low of 1672 was touched on November 20, Lex commented, rather uncomfortably, that the markets were healthier for the weeding out of speculative positions"—there were some worries, though, about Account Day, The next day the Treasury hill rale moved above 5 per cent. Within a week, the equity market, depressed by the largest ever industrial financing in the shape of a £40m ICI convertible (who says that ICl always raises hy two points or more. —which earns its living out.

The paper of December 4th, of international trade and

premium rose to a 4-year high the UN timelable-phrases such as "humlliating fiasco" were not employed. The market turned on a sixpence. Equitles Not even the Lex columnist- had their best day for eight was perturbed—he padded out months, putting on 3.3 points. the column of Monday Novem- On the evening of the fourth ber 5th (the day of the airborne the Chancellor announced that invasion, as it bappened) with the reserves had fallen by advice, which it would be \$279m in November - which churlish to disinter, on "picking must have been something of a a portfolio for growth." Even shock to FT readers, who had

heen assured tjournalists being as guilible then as they are now) that the authorities had not needed to intervene haddle to support sterling. A drawing on the IMF was announced and a swingeing increase in indirect taxes—petrol. for those who could find any, went up by is 5d a galloo.

The jobbers, who had some in for a certain amount of ster for their very reasonable decision to widen trading spreads, tried to mark price down sharply on Mr Macmillage disaster package. They were wasting their time. The market hegan to run—putting on the began to run—putting on 125 points in seven business days. The week before Christmas the Treasury bill rate at tender was the lowest for ten mentis, and although the FT index at Christmas was 22 points down on the previous year at 1782 with the Government Securities Index down 6 points at 84.16. both were pointing clearly up

On New Year's Eve there was

frantic activity in the gill-edged market, centred around the short tap: Lex snggested the recovery might be "too hot to last." The departure of the Prime Minister, Sir Anthony Eden, on January 9th will regarded as good news - it meant there would be m General Election. There was another splendid day on the 14th, with gilts up by 4 point and then the new France.
Minister proposed more can indefence. There was to be incomore spending on "things we don't need, or commitments well-can't sustain." By the end of January long ted, gilt-edged, yields had moved down from the November high of ones. per cent in around 41 per cent. The official reserves continued to fall in December (net of the IMF drawing) and January, but on February 7 the market got the half point cut in bank rate that it had been looking for, .

Losing face:

In 1956, as in 1982, the Cky uncomfortable with the sudden adoption of a high profile by the British military, and out at all worried by subsequent humiliation. In the first instance, the markets did not principally respond to bugging fears about the cost-of financing a war, but to worries about the international crisis in general and the stability of the British Government in particular.

Continued from Page 1 **Firestone**

might he vulnerable to a takeover.
As well as bringing in hadly

needed cash, selling Hertz would also take a substantial amount of associated horrowing out of RCA's balance sheet. But Wall Street is uncertain about whether Firestone will be able to pay RCA's price.
Firestona's share price
slipped by \$\frac{1}{2}\$ to \$10.50 yester-

day morning. At this price the company is valued at roughly

rejected by its 40 senior BL labour.

diplomatic isolation from all mediation does not prove Britain's auccessful mobilisa-except a bandful of other Latin successful, in defusing the tion of Government opinion

American countries, Argentina was vesterday preparing to the two countries are close, and invoke an Inter-American the Soviet Ambassador in Treaty of Recoprocal Assistance Buenos Aires has made frequent which would oblige its members to come to its aid to confront Britain's fleet.

We analysis of the Foreign Ministry over the past few days.

Meanwhile, teading Argentine

Falklands Continued from Page 1

crisis. Economic ties between

Britain's fleet.

Meanwhile, leading Argentine
Hints have also been dropped
that the Government may be
prepared to play the Soviet card to seek support for their
It holds in reserve if the U.S. country's case in the face of patched to Italy.

Sr Francisco Gerram, the head of the small Christian the Multi Partidaria, the politi cal opposition front on a trip to Spain, Italy and the Vertica while a former Ambassador to Rome, Sr Rafael Martinez Raymonda has also been des-

Former Turkish Prime Minister rearrested

BY METIN MUNIR IN ANKARA

MR BULENT ECEVIT, the former Turkish Prime Minister, was rearrested in Ankara yesterday only hours after a military court, hearing charges that he had given an interview to a Norwegian newspaper in defiance of Government orders, had ordered his release from deten-

tion. The The Turkish authoritiaa detained Mr Ecevit, the chief opponent of the military regime, on Saturday and charged him with issuing false statements to a Norwegian newspaper which were considered detrimental to Turkey's pres-tige and authority abroad.

After yesterday's court appearance, Mr Ecevit's wife poration. being held, not to wait for her husband. This time he was with an interwiew he had given appear before a court "in a day to the British Broadcasting Cor-

TURKEY'S military authorities yesterday accused the Ankara correspondent of the Financial Times and the British Broad-easting Corporation. Mr Metin Munir, of writing false and unfounded stories. He was threatened with deportation. The warning to Mr Munir, a correspondent in Ankara for

more than ten years, was one of the strongest moves against the foreign press in Turkey since the military seized power in Mr Munir bad been on holiday on Turkey's Black Sea coast when three policemen visited him late last night and told him

law headquarters. He did so and was told by a colonel that he had been sending "false and unfounded stories" about Turkey and would be deported if "one more such report appeared."

Mr Munir was charged last year under a penal code article barring the dissemination of false information about Turkey abroad, but the charges were later dropped.

was told by a military official at the Army Language and Intelligence School where he was authoritles examined the BBC interview. He said the 56-yearbeing detained in connection old social democrat would

to be back in Ankara by mid-day today and to contact martial

Mr Ecevit arrived at the martial law court in Ankara's Mamak military eamp to face the charges made against bim on Saturday, in a green army minibus accompanied by seven appearance before the one-man court lasted about ten minutes Spiegel and to Dutch television.

and was held in camera. It was not clear yesterday whether the charges had been dropped. His lawyers said he bad been misquoted by the Norwegian news-

Mr Ecevit's detention comes in the wake of a stern warning from General Kenan Evren, the head of state and chief of ataff, to former political leaders, whom be toppled 19 months ago, that he would not hesitate to take the "severest measures" against former political leaders unless they stopped all political activity.

The military administration dissolved all of Turkey's parties and banned former politicians from making public statements. Mr Ecevit, the only politician to break this ban, has already served a two month jail sentence. He is to appear before a martial law court on April 29 armed military policemen. His on charges of giving interviews appearance before the one-man to the German magazine Der

WORLDWIDE

oudy, F.—Feir, Fg—Fog, H.—Heil, P—Roin, S.—Sunny, S!—Sleet, Sn—Snow, 7.—Thundor, † Noon GMT temperatures,

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